

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Piedmont Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

J. W. Fergusson & Sons, Inc.  
City of Richmond, Virginia  
Permit No. PRO50224

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, J. W. Fergusson & Sons, Inc. has applied for a Title V Operating Permit for its Richmond, VA facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:\_\_\_\_\_

Date:\_\_\_\_\_

Air Permit Manager:\_\_\_\_\_

Date:\_\_\_\_\_

Regional Deputy Director:\_\_\_\_\_

Date:\_\_\_\_\_

## **FACILITY INFORMATION**

### Permittee/Facility

J. W. Fergusson & Sons, Inc.  
4107 Castlewood Road  
Richmond, VA

AIRS ID No. 51-760-0093

## **SOURCE DESCRIPTION**

SIC Code: 2754 – Engaged primarily in rotogravure printing.

J. W. Fergusson & Sons, Inc. operates a rotogravure printing facility in Richmond, Virginia. Emission units include 6 rotogravure presses (Presses No. 1 through 6) each with 7-8 application stations and a gas-fired or steam-heated dryer. All of the presses are contained within permanent total enclosures, with Presses 1 & 2 venting to a catalytic afterburner to control VOC emissions, and Presses 3-6 vented to a carbon adsorption system, also to control VOC emissions. The facility operates two (2) automated parts washing systems with fugitive emissions (PRI and Renzmann), and a chrome plating operation for re-plating of engraved cylinders. The chrome plating baths are vented to a composite mesh-pad system and is subject to 40 CFR 63 Subpart N. Two natural gas-fired boilers rated at 10.5 MMBtu/hr provide heat and steam for the facility. The facility is a major source for 40 CFR 63 Subpart KK applicability.

The facility is a Title V major source of VOC. This source is located in an attainment area for all pollutants, and is a PSD major source. The presses, parts washers, and make-ready room at the plant were all included in a new source review permit dated October 29, 1999. **This permit superseded several previous minor new source review permits dated August 3, 1981, August 11, 1982, September 4, 1986, September 27, 1991, April 20, 1995, August 16, 1995, October 20, 1995, and January 9, 1997, and nonattainment permits dated September 4, 1986, February 18, 1987, June 30, 1988.**

## **COMPLIANCE STATUS**

The facility is inspected once per year.

# EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following :

Emission Unit ID (EU ID)	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID (PCD ID)	Stack ID	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>							
21	Cleaver Brooks Model CB-700X-250 Boiler 1982	10.5 million btu/hr heat input capable of burning natural gas			002		October 29, 1999
22	Cleaver Brooks Model CB-700X-250 Boiler 1982	10.5 million btu/hr heat input capable of burning natural gas			003		October 29, 1999
<b>Printing Operations</b>							
01	Champlain 27" 7 station packaging rotogravure press (Press #1) 1988	680 feet/min and 315 lbs VOC input per hour	TEC Quantum 2000 catalytic incinerator with total enclosure	01	006A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum destruction efficiency of 95%				
			Minimum overall control efficiency of 95%				
02	Champlain 38" 8 station packaging rotogravure press (Press #2) 1970	1000 feet/min and 315 lbs VOC input per hour	TEC Quantum 2000 catalytic incinerator with total enclosure	01	006A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum destruction efficiency of 95%				
			Minimum overall control efficiency of 95%				

Emission Unit ID (EU ID)	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID (PCD ID)	Stack ID	Pollutant Controlled	Applicable Permit Date
03	Champlain 38" 8 station packaging rotogravure press (Press #3) 1974	1000 feet/min and 315 lbs VOC input per hour	M & W activated carbon adsorbtion system with permanent total enclosure (PTE):	02	005A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum adsorber efficiency of 73%				
			Minimum overall control efficiency of 73%				
04	Champlain 38" 8-station packaging rotogravure (Press #4) 1977	1000 feet/min and 315 lbs VOC input per hour	M & W activated carbon adsorbtion system with permanent total enclosure (PTE):	02	005A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum adsorber efficiency of 73%				
			Minimum overall control efficiency of 73%				
05	Champlain 38" 8 station packaging rotogravure press (Press #5) 1981	1000 feet/min and 315 lbs VOC input per	M & W activated carbon adsorbtion system permanent total enclosure (PTE):	02	005A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum adsorber efficiency of 73%				
			Minimum overall control efficiency of 73%				

06	Chestnut 16" 8 station packaging rotogravure press (Press #6) 1987	600 feet/min and 175 lbs/ VOC input per hour	M & W activated carbon adsorption system with permanent total enclosure (PTE):	02	005A,B	VOC	October 29, 1999
			Minimum capture of 100%				
			Minimum adsorber efficiency of 73%				
			Minimum overall control efficiency of 73%				
Cleaning operations							
08	Floor washing PTE presses 1 & 2	2 gallons/hr solvent	TEC Quantum 2000 catalytic incinerator with permanent total enclosure	01	006A,B	VOC	October 29, 1999
09	Floor washing PTE presses 3,4,5 & 6	4 gallons/hr solvent	M & W activated carbon adsorption system with permanent total enclosure	02	005A,B	VOC	October 29, 1999
07	Progressive Recovery, Inc. parts washer Model SWS-400 1995	0.787 lbs VOC/cycle input 2 wash cycles/hr			008		October 29, 1999
10	Renzmann parts washer 1987	18.6 lbs VOC/cycle input 1 wash cycle/hr			009		October 29, 1999
11	Make-ready room (Cylinder Wash, Doctor Blade Tank, Floor Wash)	12.8 lbs VOC/hr input			Fugitive		October 29, 1999
Electroplating operations							
31	Hard chrome tank chrome tank rectifier 1989	5000 amp-hrs	Viron Model VCS-2626-PVC-2-3/M-C-99.8 composite mesh pad mist eliminator with design control efficiency of 99.8%	03	010	chromium	

**EMISSIONS INVENTORY**-Emissions for year 2000 are summarized in the following tables.

Emission Unit	2000 Actual Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
21 (CB boiler)	.03	.49	0	.04	.59
22 (CB boiler)	.03	.49	0	.04	.59
01 (Press #1)	.09	.05	0	0	.06
02 (Press #2)	.95	.51	0	.05	.60
03 (Press #3)	3.36	0	0	0	0
04 (Press #4)	3.09	0	0	0	0
05 (Press #5)	3.32	0	0	0	0
06 (Press #6)	0.21	.07	0	.01	.09
07 (PRI Parts Washer)	1.83	0	0	0	0
08 (Floor washing, 1&2)	.04	.02	0	0	.02
09 (Floor washing, 3-6)	.17	0	0	0	0
10 (Renzmann)	12.15	0	0	0	0
11 (Make-Ready room)	3.21	0	0	0	0
31 (chrome tank)	0	0	0	0	0
Total	28.47	1.63	.01	.15	1.94

Pollutant	Actual Hazardous Air Pollutant Emissions in 2000 in Tons/Year
Chromium	.00005
Toluene	5.11
Hexane	0
Methyl Ethyl Ketone	0
Xylene	0

## EMISSION UNIT APPLICABLE REQUIREMENTS – Fuel Burning Equipment

### Limitations

*The boilers (EU ID. #21 & 22) were installed prior to the affected facility date of NSPS Subpart Dc, and therefore do not have Dc as an applicable requirement. The boilers are subject to the opacity standard for new units.*

The following limitation for the Cleaver Brooks boilers (EU ID #21 and 22) is contained in the August 11, 1982 permit, which was superseded by the permit dated September 27, 1991 :

8. The nitrogen oxide emissions from each boiler shall not exceed 1.83 pounds per hour, nor 5.49 tons per year.  
(9 VAC 5-50-260 of State Regulations)

*The August 11, 1982 permit was superseded by the permit dated September 27, 1991. The 1991 permit did not contain any provisions for the boilers; all conditions for the boilers were essentially removed, and only the opacity rule has been in effect since the 1991 permit was issued. The source has requested an emission limit equal to the boilers' potential to emit. Since they are small and fired by natural gas only, the emissions are low. (9.2 tons/yr vs. 5.5 tons/yr in the original 1982 permit).*

The following conditions from the Title V permit have been added for determination of compliance and enforceability:

1. Fuel allowed is natural gas.  
(9 VAC 5-80-110)
2. The boilers limited to  $10.46 \times 10^3$  cubic feet of natural gas per hour, 183 million cubic feet of natural gas per year.  
(9 VAC 5-80-10)
4. Emissions from boilers controlled by operation and maintenance practices. Required to have operating procedures and maintenance schedule. Required to keep these records for 5 years.  
(9 VAC 5-80-10 K)

The following standard comes from the general new source regulations.

9 VAC 5-50-80 – 20% opacity, except for one 6 minute period of 30% opacity.

### Monitoring

The following chart delineates the periodic monitoring requirements for EU ID 21 and 22.

Periodic Monitoring Requirements for Units 1 and 2 (Cleaver Brooks Boilers)				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
Fuel allowed is natural gas.	Boiler construction and design is such that only natural gas may be used.	none needed	none needed	none needed

Hourly limitations on fuel of $10.46 \times 10^3$ cubic feet per hour natural gas	Boiler rating; Fuel characteristics; Formulas	Facility must keep on hand formulas and fuel specifications showing that at no time may the boilers exceed these limits. SEE LIMITATION DEMONSTRATIONS BELOW.		
Hourly and annual emissions limitations for the boilers.	Boiler rating; Fuel characteristics; Emission factors from AP-42; Formulas	Facility must keep on hand formulas, boiler ratings, fuel characteristics, emission factors from AP-42, and formulas to show that neither boiler is able to exceed these limits. SEE LIMITATIONS DEMONSTRATION BELOW.		
Control of boiler emissions via operations and maintenance.	Good written operating procedures; Maintenance schedule;	n/a	Maintain maintenance schedule on site. Records of maintenance and repair; Copy of operating procedures on site.	n/a
9 VAC 5-50-80 opacity standards	visible emissions and opacity		Fuel usage records (natural gas only); records of boiler maintenance.	Report fuel throughput annually as part of emission inventory.

Conditions will be added to the TV permit to reflect the above chart. Monitoring conditions to be added for TV periodic monitoring demonstrations (9 VAC 5-80-110 B) are as follows:

- Boilers limited to natural gas fuel only

#### LIMITATION DEMONSTRATION

The new source permit dated 8/11/1982 contains limitations on hourly and annual emissions of  $\text{NO}_2$ ,  $\text{SO}_2$ , and particulate (Condition #8). Although this permit was superseded, the new permit inadvertently contained no limits for the boilers. These emission limits have been increased to equal the boilers' potential to emit, and a throughput limitation has been added to the Title V permit. This demonstration will show that maintaining records of boiler size, fuel characteristics, emission factors, and formulas is sufficient for periodic monitoring for these conditions.

#### Hourly fuel limitations of 10,460 cubic feet of natural gas per hour:

Given: Maximum rated heat input of 10.46 million btu/hr  
Natural gas has a heat capacity of 1000 btu/cubic foot

Natural gas:  $10,460,000 \text{ btu/hr} \div 1 \text{ cubic foot/1000 btu} = 10,460 \text{ cubic foot/hr}$

Therefore, the boilers, at current capacity with these types of fuels, are not able to exceed the hourly fuel limitations in the Title V permit.

#### Hourly and annual emission limitations:

Given: Maximum rated heat input of 10.5 million btu/hr x 2 boilers

The following emission factors for natural gas use are from AP-42, Table 1.4-1 and 1.4-2 (3/98):

$\text{NO}_x = 100 \text{ lbs/million cubic feet}$

$\text{CO} = 84 \text{ lbs/million cubic feet}$  (CO not limited in 8/11/82 permit, so a CO limit is not added in the Title V permit, even though calculated emissions are greater than 0.5 ton/yr )

$\text{SO}_2 = 0.6 \text{ lbs/million cubic feet}$



PM=7.6 lbs/million cubic feet

Formula for hourly emissions: rating(btu/hr)\*heat capacity (unit of measure/btu)\*factor

Annual emissions: hourly emissions \* 8760 hours/year\* 1 ton/2000 lbs

Heat capacity of natural gas is 1000 btu/cubic foot

<b>Calculations for two boilers (10.5 MMBtu/hr x 2)</b>					
	Permit Limits		Emission Factors	Max hourly emissions	Max annual emissions
	Lbs/hr	tpy	lbs/mmcft	lbs/hr	Tpy
TSP/PM <sub>10</sub>	--	--	7.6	0.2	0.7
SO <sub>2</sub>	--	--	0.6	.01	.05
NO <sub>x</sub>	2.1	9.2	100	2.1	9.2
CO	--	--	84	1.8	7.7

Therefore, as long as the rated capacities of the boilers stay the same, the emission limits listed in Condition III.A.3 of the Title V permit shall not be exceeded. As stated in the periodic monitoring chart, the facility will be required to keep the above listed emission factors, fuel characteristics, boiler ratings, and formulas on site.

### Recordkeeping

The following record keeping requirements are for the purposes of periodic monitoring (9 VAC 5-80-110):

- Required to keep fuel usage records (monthly throughput of natural gas)
- Records of boiler ratings, fuel characteristics and formulas to provide compliance with emission limits.
- Maintain a copy of the operating procedures on site.

### Testing

The permit does not require source tests for the boilers. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

The following condition is from the Commonwealth of Virginia's *Regulations for the Control and Abatement of Air Pollution*:

- The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations.  
(9 VAC 5-50-30, 9 VAC 5-80-110)
- If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the following methods in accordance with procedures approved by the DEQ as follows:

Pollutant	Test Method (40 CFR Part 60, Appendix A)
NO <sub>x</sub>	EPA Method 7 or as required by DEQ
Visible Emission	EPA Method 9

(9 VAC 5-80-110)

## **Reporting**

To support the periodic monitoring requirements (9 VAC 5-80-110 B) of the TV permit, the following conditions regarding reporting will be placed in the TV permit.

- Report annual fuel throughput (natural gas)

## **Streamlined Requirements**

Emission limitations for SO<sub>2</sub> and particulate (Conditions 6 and 7 of the 8/11/82 permit) were not included in the Title V permit, since the emissions from these pollutants are less than 0.5 ton. Also, a provision that the boilers may not operate simultaneously was deleted, since they are natural gas-fired and emissions are low.

## **Inapplicable Requirements**

These boilers are not subject to NSPS Subpart Dc since they were built prior to the affected unit date of that regulation, June 9, 1989.

**EMISSION UNIT APPLICABLE REQUIREMENTS – Printing Operations and Cleaning  
Operations (Presses 1 & 2)**

**Limitations**

*The printing operation involves packaging rotogravure rather than publication rotogravure, therefore NSPS Subpart QQ does not apply.*

The following limitations for the Printing and Cleaning Operations originate from the October 29, 1999 permit (and the Condition numbers shown are from that permit). Changes to these Conditions are **bold**.

6. VOC emissions from the operation and cleaning of presses 1 and 2, including floor washing, shall be captured by a permanent total enclosure and controlled by a catalytic incinerator having a destruction efficiency of at least 95% on a mass basis. The emission control system shall be provided with adequate access for inspection.  
(9 VAC 5-80-10 H of State Regulations)
8. The daily overall control efficiency for each press (Nos. 1 & 2) shall equal or exceed 95%.  
(9 VAC 5-50-260 of State Regulations)
9. VOC emissions from the operation of each of the presses, including press cleaning and floor washing, shall not exceed the limitations specified below:

<u>Press Number</u>	<u>pounds/day<sup>1</sup></u>	<u>tons/yr<sup>2</sup></u>
1	450	30.0
2	480	30.0

Press Nos. 1 & 2 Enclosure Press Cleaning and Floor Washing

2.2 lbs/day<sup>1</sup>                      0.4 tons/yr<sup>2</sup>

(9 VAC 5-50-260 of State Regulations)

12. The annual throughput of solvent VOC to be used for press cleaning and floor washing within the Press 1 and 2 permanent total enclosure shall not exceed 9 tons per year, calculated monthly as the sum of the throughput for the previous consecutive 12 months.  
(9 VAC 5-80-110 of State Regulations)
13. Cleaning of presses and floors within the enclosure shall only be conducted when the catalytic or is in operation and in compliance with a daily 95% control efficiency.  
(9 VAC 5-80-110 of State Regulations)
17. The permanent total enclosures shall meet the following criteria:
  - a. Any natural draft openings shall be at least 4 equivalent opening diameters from each VOC emitting point;

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<sup>1</sup>daily

<sup>2</sup>annual emissions, calculated monthly as the sum over the previous consecutive 12 month period

- b. The total area of all natural draft openings shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling;
  - c. The average facial velocity of air through the natural draft openings shall be at least 200 feet per minute and the direction of flow shall be into the enclosure **(or, if differential pressure is measured, the pressure drop shall be at least .007 in. H<sub>2</sub>O)**;
  - d. All access doors and windows shall be closed during routine operation of the press **(except those which are included in determining the area of natural draft openings)**.
  - e. All of the exhaust gases from the enclosure shall be directed to the carbon bed adsorption system or the catalytic incinerator.  
(9 VAC 5-80-30 F of State Regulations)
22. In order to facilitate compliance measurements, test ports shall be maintained at the inlet and outlet ducts of each control device and either at the enclosure exhaust ducts or at the exhaust ducts from each press.  
(9 VAC 5-50-30 F of State Regulations)
24. The inlet gas stream flow rates to the catalytic incinerator shall not exceed the design capacity. However, if a greater flow rate is used during the performance test and that greater flow rate resulted in at least a 95% VOC destruction efficiency for the catalytic incinerator, and if that test is acceptable to the DEQ, the control device so tested can be operated up to that higher flow rate.  
(9 VAC 5-80-10 H of State Regulations)

*The following limitations were added to Section IV.A due to the applicability of 40 CFR 63 Subpart KK; the facility is major under this subpart (numbering is from Title V permit):*

- 7. Except where this permit is more restrictive than the applicable requirement, the rotogravure presses (EU ID No. 1 & 2) shall be operated in compliance with 40 CFR 63 Subpart KK.  
(9 VAC 5-60-60 and 9 VAC 5-60-70)
- 8. HAP emissions shall be limited to no more than five percent of organic HAP applied for the  
(40 CFR 63.825)
- 9. The permittee shall submit a plan to demonstrate continuous compliance with Condition 8 in accordance with the following requirements. The permittee shall:
  - a. Submit to the Director, Piedmont Regional Office with the compliance status report required by § 63.9(h) of the 40 CFR 63 General Provisions, a plan that:
    - 1) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained.
    - 2) Discusses why this parameter is appropriate for demonstrating ongoing compliance, and
    - 3) Identifies the specific monitoring procedure.
  - b. Set the operating parameter value, or range of values, that demonstrate compliance with Condition 8, and

- c. Conduct monitoring in accordance with the plan submitted to the Director, Piedmont Regional Office unless comments received from the Director, Piedmont Regional Office require an alternate monitoring scheme.  
(40 CFR 63.828(a)(5))
10. J. W. Fergusson & Sons, Inc. shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The plan shall identify all routine or otherwise predictable control and monitoring system malfunctions. This plan shall be developed by the owner or operator by the source's compliance date for that relevant standard. The plan shall be incorporated by reference into the source's Title V permit (Appendix A to this permit).  
(40 CFR 63.9(e)(3))
11. The facility shall be subject to the General Provisions (Subpart A) of 40 CFR 63 as outlined in the table below:

Table 1 to Subpart KK of 40 CFR 63: General Provisions Applicability to Subpart KK

Reference	Applies to Subpart KK	Comment
63.1(a)(1)-(a)(4)	Yes.	
63.1(a)(5)	No.	Section reserved.
63.1(a)(6)-(a)(8)	No.	
63.1(a)(9)	No.	Section reserved.
63.1(a)(10)-(a)(14)	Yes.	
63.1(b)(1)	No.	Subpart KK specifies applicability.
63.1(b)(2)-(b)(3)	Yes.	
63.1(c)(1)	Yes.	
63.1(c)(2)	No.	Area sources are not subject to Subpart KK.
63.1(c)(3)	No.	Section reserved.
63.1(c)(4)	Yes.	
63.1(c)(5)	No.	
63.1(d)	No.	Section reserved.
63.1(e)	Yes.	
63.2	Yes.	Additional definitions in Subpart KK.
63.3(a)-(c)	Yes.	
63.4(a)(1)-(a)(3)	Yes.	
63.4(a)(4)	No.	Section reserved.
63.4(a)(5)	Yes.	
63.4(b)-(c)	Yes.	
63.5(a)(1)-(a)(2)	Yes.	
63.5(b)(1)	Yes.	
63.5(b)(2)	No.	Section reserved.
63.5(b)(3)-(b)(5)	Yes.	
63.5(c)	No.	Section reserved.
63.5(d)	Yes.	
63.5(e)	Yes.	
63.5(f)	Yes.	
63.6(a)	Yes.	
63.6(b)(1)-(5)	Yes.	
63.6(b)(6)	No.	Section reserved.
63.6(b)(7)	Yes.	

63.6(c)(1)-(2)	Yes.	
63.6(c)(3)-(c)(4)	No.	Sections reserved.
63.6(c)(5)	Yes.	
63.6(d)	No	Section reserved.
63.6(e)	Yes.	Provisions pertaining to start-ups, shutdowns, malfunctions, and CMS do not apply unless add-on control system is used.
63.6(f)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	Subpart KK does not require COMS.
63.6(i)(1)-(i)(14)	Yes.	
63.6(i)(15)	No.	Section reserved.
63.6(i)(16)	Yes.	
63.6(j)	Yes.	
63.7	Yes.	
63.8(a)(1)-(a)(2)	Yes.	
63.8(a)(3)	No	Section reserved.
63.8(a)(4)	No	Subpart KK specifies the use of solvent recovery devices or oxidizers.
63.8(b)	Yes.	
63.8(c)(1)-(c)(3)	Yes.	
63.8(c)(4)	No	Subpart KK specifies CMS sampling requirements.
63.8(c)(5)	No.	Subpart KK does not require COMS
63.8(c)(6)-(c)(8)	Yes.	Provisions for COMS are not applicable.
63.8(d)-(f)	Yes.	
63.8(g)	No.	Subpart KK specifies CMS data reduction requirements
63.9(a)	Yes.	
63.9(b)(1)	Yes.	
63.9(b)(2)	Yes.	Initial notification submission date extended.
63.9(b)(3)-(b)(5)	Yes.	
63.9(c)-(e)	Yes.	
63.9(f)	No.	Subpart KK does not require opacity and visible emissions observations.
63.9(g)	Yes.	Provisions for COMS are not applicable.
63.9(h)(1)-(3)	Yes.	
63.9(h)(4)	No.	Section reserved.
63.9(h)(5)-(6)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)(1)-(b)(3)	Yes.	
63.10(c)(1)	Yes.	
63.10(c)(2)-(c)(4)	No.	Sections reserved.
63.10(c)(5)-(c)(8)	Yes.	
63.10(c)(9)	No.	Section reserved.
63.10(c)(10)-(c)(15)	Yes.	
63.10(d)(1)-(d)(2)	Yes.	
63.10(d)(3)	No	Subpart KK does not require opacity and visible emissions evaluations.
63.10(d)(4)-(d)(5)	Yes.	
63.10(e)	Yes.	Provisions for COMS are not applicable.
63.10(f)	Yes.	
63.11	No	Subpart KK specifies the use of solvent recovery devices or

63.12-63.15

Yes.

oxidizers.

## Monitoring

The following chart delineates the periodic monitoring requirements for EU ID Nos. 01, 02, and 08:

Periodic Monitoring Requirements for Presses 1 and 2 and Floor Washing				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
Condition #6 of 10/29/99 permit: 100% PTE and catalytic incinerator with destruction efficiency of 95%	100% PTE: facial velocity through openings, or differential pressure	Device to measure facial velocity (or alternatively differential pressure), calibrated and maintained per manufacturer	Once per shift, record reading to ensure above 200 feet/min (or .007 in. H <sub>2</sub> O); check enclosure openings daily	Monthly and semiannually report periods when facial velocity is beneath 200 Ft/min (or differential press. Less than .007 in H <sub>2</sub> O), and corrective action, if necessary
	95% destruction efficiency of catalytic incinerator	VOC inlet and outlet monitoring	Daily	Monthly and semiannually when daily average is below 95%
Condition #8 of 10/29/99 permit: Daily overall control efficiency at least 95%	Overall control efficiency 95% (daily basis)	VOC inlet and outlet monitoring	Daily	Monthly and semiannually when daily average is below 95%
Condition #9 of 10/29/99 permit: VOC daily/annual press emissions limitation	VOC throughput, capture efficiency, destruction efficiency of catalytic incinerator	Daily recordkeeping of throughput and overall efficiency	Daily recordkeeping in accordance with AQP-4	Monthly and semiannually, periods when VOC emission limits are exceeded
Condition #12 of 10/29/99 permit: Cleaning solvent VOC limited to 9 tons/yr	Tons/yr of solvent VOC used for press cleaning & floor washing in the Press 1 & 2 enclosure	Solvent VOC content, throughput; total VOC used monthly	Monthly recordkeeping	Monthly and semiannually if 12-month total is exceeded
Condition #17 of 10/29/99 permit: PTE requirements	Facial velocity (or differential pressure)	Device to measure facial velocity (or differential pressure)	Record measurement once per shift	Monthly and semiannually report periods when facial velocity is below 200 feet/min (or differential pressure is less than .007 in H <sub>2</sub> O), and any corrective action taken
40 CFR 63 Subpart KK		No periodic monitoring necessary for this standard since it was promulgated after 1990 and therefore contains sufficient monitoring to give a reasonable assurance of compliance.		

Conditions will be added to the TV permit to reflect the above chart.

*The following Conditions are taken from the permit dated October 29, 1999 (and Condition numbers are taken from that permit). Changes to these conditions are indicated in **bold**.*

- Each permanent total enclosure shall be verified to meet the requirements of Condition 17, for each day that enclosed presses are in operation, by one of the following methods:

- a. a daily demonstration that the enclosure is unchanged since the last performance test of the enclosure, using test records and installed monitoring devices. The enclosure shall be considered to be unchanged if the daily enclosure air flow monitoring device recorded reading represents an enclosure average facial air velocity **or pressure drop** that meets the requirements of Condition 17 and the enclosure openings are either in the same position as they were during the most recent enclosure performance test, or shut; or
- b. a performance test of the enclosure using procedures for permanent total enclosures of AQP-3 and EPA Reference Method 204 (ref. 40 CFR 51, Appendix M) demonstrates that the permanent total enclosure requirements of Condition 17 are met for that day.

Daily verification records shall be kept in a format acceptable to the DEQ (Director, Piedmont Region). If an enclosure cannot be demonstrated to meet the permanent total enclosure requirements of Condition 17, a VOC capture efficiency test on each of the enclosed presses or upon the enclosure shall be performed in accordance with AQP-3, EPA Reference Methods (ref. 40 CFR 51, Appendix M) and test procedures acceptable to the DEQ (Director, Piedmont Region) within 60 days thereafter.

(9 VAC 5-80-10 H and 5-80-110 E of State Regulations)

15. Continuing compliance with the 95% daily overall control efficiency requirement for the operation and cleaning of press units 1 and 2 and for press 1 and 2 enclosure floor washing operations shall be demonstrated as specified below:

- a. The catalytic incinerator shall be in operation for all periods of printing and cleaning operations within the enclosure.
- b. The press interlock (which is part of the design of the catalytic incinerator) shall be set to shut down printing operations on presses 1 and 2 whenever the inlet catalyst bed temperature (**three-hour average**) falls below the minimum temperature demonstrated during the most recent performance test of the catalytic incinerator that achieves at least 95% destruction efficiency. When the interlock is properly set, the last annual test of the catalyst indicates that the activity of the catalyst is within manufacturer design specifications, and the catalytic incinerator is operating, then the VOC daily destruction efficiency (DDE) of the catalytic incinerator shall be assumed to be equal to that determined in the most recent performance test; and
- c. The daily overall control efficiency for each press and for press cleaning and enclosure floor washing operations shall be calculated using the daily VOC destruction efficiency of the catalytic incinerator and the VOC capture efficiency assigned to the enclosure by the most recent performance test acceptable to the DEQ (Director, Piedmont Regional Office). When the permanent total enclosure has been verified in accordance with Condition 7, above, to demonstrate that the requirements of Condition 6 are being met for that day, then the VOC capture efficiency (CAP) assigned to each press and to cleaning operations within the enclosure for that day shall be 100%.

(9 VAC 5-80-10 H of State Regulations)

19. J. W. Fergusson & Sons, Incorporated shall calibrate, operate, and maintain monitoring devices that continuously measure and record the gas temperatures both upstream and downstream of the catalyst bed during operation of presses 1 and 2, and shall comply with the following requirements:



- a. The temperature sensors shall be maintained in a location as close as possible to the catalyst bed inlet and outlet.
- b. Each continuous monitoring device shall be calibrated annually and shall have an accuracy of  $\pm 1$  percent of the temperature being measured in Celsius degrees or  $\pm 2.5$  °C, whichever is greater.
- c. During any performance test of the catalytic incinerator destruction efficiency, J. W. Fergusson & Sons, Incorporated shall determine and record the gas temperature both upstream and downstream of the catalyst bed.

(9 VAC 5-50-40 of State Regulations)

21. J. W. Fergusson & Sons, Incorporated shall calibrate, maintain, and operate according to the manufacturer's specifications an air flow monitoring device which continuously measures differential pressure drop across the enclosure boundary or which continuously measures the face velocity of air flow into the enclosure and shall comply with the following requirements:
- a. A performance evaluation of the monitoring device shall be performed concurrently with each performance test of the permanent total enclosure.
  - b. During the concurrent performance evaluation of the air flow monitoring device, J. W. Fergusson & Sons, Incorporated shall record the measurement of the air flow monitoring device which corresponds to 200 square feet per second (or greater) of face velocity air flow into the enclosure **(or, if differential pressure is measured, a pressure drop of .007 in. H<sub>2</sub>O)** and shall record the open or shut condition of all access doors, windows, and other openings in the permanent total enclosure.
  - c. After the most recent performance test of the enclosure demonstrates that the permanent total enclosure is in compliance with the requirements of Condition 17, J. W. Fergusson & Sons, Incorporated shall determine and record the reading of the air flow monitoring device and the open or shut condition of the enclosure openings once daily under representative operating conditions during each day in which presses within the enclosure are operated.

(9 VAC 5-80-30 H, Appendix S of State Regulations)

23. J. W. Fergusson & Sons, Incorporated shall:
- a. Sample and analyze the catalyst in the catalytic incinerator on an annual basis, and replace the catalyst if any such analysis reveals that the catalyst is no longer within the design specifications. J. W. Fergusson & Sons, Incorporated shall retain the records of the analyses, the design specification, and catalyst replacement and provide them to the DEQ, if requested.
  - b. When the catalytic incinerator is operating, record the inlet and outlet temperatures of the incinerator bed and provide those readings to the DEQ, if requested.

(9 VAC 5-20-180 of State Regulations)

25. Continuing compliance with VOC emission limits for each of the presses and the associated press cleaning and floor washing operations within each enclosure shall be determined as follows:

a. Compliance with daily VOC emission limits shall be determined for each calendar day in the month, within 30 days of the end of the month, by calculating:

$DTE_1$  and  $DTE_2$  = Daily Total VOC emissions (mass) emitted from each of presses 1 and 2, to be calculated as indicated by the following formulas:

$$DTE_1 = DTU_1 \times (100\% - DOCE_1) \div 100$$

$$DTE_2 = DTU_2 \times (100\% - DOCE_2) \div 100$$

$DTE_{clean1,2}$  = Daily Total VOC Emissions (mass) from cleaning within the press 1 and 2 enclosure, calculated by the following formula:

$$DTE_{clean1,2} = DTU_{clean1,2} \times (100\% - DOCE_{encl1,2}) \div 100$$

$DTU_1$  and  $DTU_2$  = Daily Total VOC Used (mass) at each press

$DTU_{clean1,2}$  = Daily Total VOC Used (mass) to clean presses and floors within the press 1 and 2 enclosure.

$CAP_1$  and  $CAP_2$  = Capture Efficiency (%) for each of presses 1 and 2.

$CAP_{encl1,2}$  = Capture Efficiency (%) of press 1 and 2 enclosure.

$DOCE_1$  and  $DOCE_2$  = Daily Overall Control Efficiency (%) for each of presses 1 and 2, as calculated by the following formulas:

$$DOCE_1 = CAP_1 \times DDE \div 100$$

$$DOCE_2 = CAP_2 \times DDE \div 100$$

$DOCE_{encl1,2}$  = Daily Overall Control Efficiency (%) for each of presses 1 and 2, as calculated by the following formula:

$$DOCE_{encl1,2} = CAP_{encl1,2} \times DDE \div 100$$

DDE = Daily VOC Destruction Efficiency (%) of the incinerator using the data from the most recent performance test.

b. Compliance with annual VOC emission limits for each press and for press cleaning and floor washing from each enclosure shall be determined monthly, within 30 days of the end of the month, by calculating the annual VOC emissions as the sum of daily VOC emissions for each of the presses and as the sum of daily VOC emissions for cleaning and floor washing within the press 1 and 2 enclosure, for the previous consecutive 12 months.

(9 VAC 5-80-10 H and 9 VAC 5-50-20 of State Regulations)

*The following monitoring requirements were taken from 40 CFR 63 Subpart KK:*

7. The permittee shall demonstrate compliance with the overall organic HAP control efficiency required in Condition IV.A.3. and IV.A.8. using the procedures below:
    - a. Demonstrate initial compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters following the procedures below:
      - 1) Determine the oxidizer destruction efficiency (E) using the procedure in 63.827(d) of 40 CFR Part 63.
      - 2) Determine the capture system efficiency (F) in accordance with 63.827(e)-(f) of 40 CFR Part 63.
      - 3) Calculate the overall organic HAP control efficiency, (R), achieved using Equation 13 of 40 CFR 63.825.
      - 4) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameters established in accordance with 63.828(a)(4)-(5) whenever a product and packaging rotogravure press is operating.
    - b. Presses 1 & 2 are in compliance, if the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with 63.828(a)(4) for each three-hour period, and the capture system operating parameter is operated at an average value greater than the operating parameter value established in accordance with 63.828(a)(5) for each three-hour period, and the overall organic HAP control efficiency, R, is 95 percent or greater.
    - c. Any excursion from the required operating parameters which are monitored in accordance with paragraphs 40 CFR 63.828(a)(4)-(5), unless otherwise excused, shall be considered a violation of the emission standard.
- (40 CFR 63.825(b)(7), 40 CFR 63.828)

### **Recordkeeping**

34. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
  - a. Daily records of DTU, DTE, CAP, and DOCE for printing operations at each press and floor cleaning operations within each enclosure, and records of DDE for the control devices as required by specific condition 25.
  - b. Monthly records of annual VOC emissions from the operation of each of the presses, and annual VOC emissions from press cleaning and floor washing operations within each enclosure.

- c. Daily records of enclosure verifications.
- d. Continuous monitoring device data and calibrations.
- e. The total number of days, if any, for which the permanent total enclosures could not be verified using installed monitoring devices and test records while the presses were in operation or being cleaned, or while the enclosure floors were being washed.
- f. Any instances of operation or cleaning of the enclosed presses, or of floor washing within the enclosures, without the associated control device being in operation.
- g. The total number of hours, if any, during which each control device monitoring sensor and system was malfunctioning or not in operation while presses monitored by that sensor or system were in operation.
- h. Total number of days that compliance was not achieved with Conditions 8 and 9, if any, and total tons of excess emissions from each source for each day not in compliance with those conditions.
- i. **Records needed to demonstrate compliance with 40 CFR 63 Subpart KK standards; these records may include material usage, HAP usage, volatile matter usage, and solid usage. These records may also include continuous emission monitor data (temperature and facial velocity or pressure drop), and control device data.**
- j. **A written copy of the facility's startup, shutdown, and malfunction plan (contained in Appendix A to the permit). (If the plan is revised, J. W. Fergusson shall keep previous, (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record).**
- k. **Records of all maintenance performed on the enclosures and ductwork, catalytic oxidizer, and monitoring equipment.**
- l. **Records of the occurrence, duration, and cause (if known) of each malfunction of the process, air pollution control equipment, and monitoring equipment.**
- m. **Records of actions taken during periods of malfunction when such actions are inconsistent with the startup, shutdown and malfunction plan.**
- n. **Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the startup, shutdown and malfunction plan.**
- o. **Test reports documenting results of all performance tests.**
- p. **All measurements as may be necessary to determine the conditions during the performance tests.**
- q. **All documentation supporting the notifications and reports required by 40 CFR 63.9, 40 CFR 63.10, and 40 CFR 63.830.**
- r. Records of any instance of noncompliance with any permit condition.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-50-50 of State Regulations)

*In addition, the requirements of AQP-4, "Procedures for Maintaining Records for Surface Coating Operations and Graphic Arts Printing Procedures" were incorporated as Condition 2 of the Recordkeeping requirements in Section IV of the Title V Permit:*

2. Records required by "Procedures for Maintaining Records for Surface Coating Operations and Graphic Arts Printing Processes" (AQP-4):

a. The following information shall be maintained at all times:

- 1) Coating application system number.
- 2) Hours of operation per day and per year.
- 3) Method of application.
- 4) Number and types of coats applied to the substrate.
- 5) Drying method.
- 6) Substrate type.

b. The following information for each coating shall be maintained at all times:

- 1) Supplier name, coater name and identification number.
- 2) Coating density (pounds per gallon).
- 3) Volatile content of coating as supplied (percent by weight).
- 4) Water content of coating as supplied (percent by weight).
- 5) Exempt solvent content of coating as supplied (percent by weight).
- 6) Solids content of coating as supplied (percent by volume).
- 7) Name of diluent added, if any.
- 8) Identification number of diluent.
- 9) Diluent volatile organic compound density (pounds per gallon).
- 10) Volatile organic compound content of diluent (percent by weight).
- 11) Exempt solvent content of diluent (percent by weight).

c. The following information for each coating application system shall be maintained on a

daily basis:

- 1) Coating application system number.
- 2) Time period of each application run.
- 3) Coating identification number.
- 4) Amount of coating used.
- 5) Diluent and cleanup solvent identification numbers.
- 6) Amount of diluent used.
- 7) Amount of cleanup solvents used.
- 8) Calculated volatile organic compound emissions.

d. The following records shall be maintained for the catalytic oxidizer:

- 1) Control device identification number and model number.
- 2) Manufacturer.
- 3) Installation date.
- 4) Coating application systems controlled.
- 5) Whether or not the control device is always in operation when the system is serves is in operation.
- 6) Type of control device.
- 7) Destruction or removal efficiency.
- 8) Date tested.
- 9) Design exhaust gas temperature (degrees Fahrenheit), design temperature rise across catalyst bed (degrees Fahrenheit), and anticipated frequency of catalyst change.
- 10) Emission test results, including inlet volatile organic compound concentration (parts per million), outlet VOC concentration (parts per million), method of concentration determination, and date of determination.
- 11) Type and location of capture system.
- 12) Capture efficiency (percent).

## Testing

*The following condition is taken from the October 29, 1999 permit:*

22. In order to facilitate compliance measurements, test ports shall be maintained at the inlet and outlet ducts of each control device and either at the enclosure exhaust ducts or at the exhaust ducts from each press.

*Test methods for determining VOC capture efficiency and concentration were specified in Condition IV.D.2 of the Title V Permit. Requirements for an initial performance test for the catalytic oxidizer is included Condition IV.D.3 of the Title V permit, with the option to waive the requirement in accordance with Subpart KK §63.827(a).*

3. A performance test of the catalytic oxidizer to determine destruction efficiency for the purpose of meeting Conditions IV.A.3 and IV.A.7 shall be conducted by J. W. Fergusson & Sons, Inc. in accordance with the following:
- a. An initial performance test to establish the destruction efficiency of the oxidizer and the associated catalyst bed inlet temperature shall be conducted and the data reduced in accordance with the following reference methods and procedures:
- 1) Method 1 or 1A of 40 CFR 60, Appendix A is used for sample and velocity traverses to determine sampling locations.
  - 2) Method 2, 2A, 2C, or 2D of 40 CFR 60, Appendix A is used to determine gas volumetric flow rate.
  - 3) Method 3 of 40 CFR 60, Appendix A is used for gas analysis to determine dry molecular weight.
  - 4) Method 4 of 40 CFR 60, Appendix A is used to determine stack gas moisture.
  - 5) Methods 2, 2A, 3, and 4 of 40 CFR 60, Appendix A shall be performed, as applicable, at least twice during each test period.
  - 6) Methods 18, 25 and 25A of 40 CFR 60, Appendix A shall be used to determine organic volatile matter concentration. The owner or operator shall submit notice of the intended test method to the Director, Piedmont Regional Office for approval, along with notice of the performance test required under this section.
  - 7) Each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the affected source is operating under normal operating conditions. For the purpose of determining organic volatile matter concentrations and mass flow rates, the average of results of all runs will apply.
  - 8) Organic volatile matter mass flow rates shall be determined using Equation 20 of 40 CFR 63 Subpart KK §63.827.

- 9) The catalytic oxidizer efficiency shall be determined using Equation 21 of 40 CFR 63 Subpart KK §63.827.
- b. J. W. Fergusson & Sons, Inc. shall record such process information as may be necessary to determine the conditions of the performance test. Operations during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.
- c. For the determination of the catalyst bed inlet temperature, the time-weighted average of the values recorded during the performance test shall be computed. J. W. Fergusson & Sons, Inc. shall establish as the operating parameter the minimum gas temperature upstream of the catalyst bed. This minimum temperature is the operating parameter value that demonstrates continuing compliance with the requirements of Conditions IV.A.3 and IV.A.8.

(40 CFR §63.827)

## Reporting

*The following condition is taken from the October 29, 1999 permit:*

26. For every month in which J. W. Fergusson & Sons, Incorporated is not in compliance with any condition of this permit for any part of the month, J. W. Fergusson & Sons, Incorporated shall submit a report in writing to the DEQ (Director, Piedmont Regional Office) within 30 days following the end of the month, stating the applicable permit condition, describing the circumstances of the noncompliance with the permit condition, and containing any pertinent records from the list of required records in Condition 15. Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it restrict in any way the DEQ's authority to enforce the conditions of this permit pursuant to Section 113 of the Clean Air Act. (9 VAC 5-50-50 E of State Regulations)

*The following Conditions were added to Section IV.E from 40 CFR 63 Subpart KK; additional reporting requirements are contained in the General Provisions found in Table 1. Those found below were highlighted in §63.830.*

2. If actions taken by the permittee during a start-up, shutdown, or malfunction (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the start-up, shutdown, and malfunction plan contained in Appendix A to this permit, J. W. Fergusson & Sons shall submit a start-up, shutdown and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, and shall be submitted semi-annually. Separate start-up, shutdown, or malfunction reports are not required if the information is included in the report specified in Condition IV.E.4. (9 VAC 5-60-90, 40 CFR 63.830(a)(5))

### **Added for periodic monitoring:**

3. **The permittee shall submit reports semi-annually to the Director, Piedmont Regional Office of the following:**
  - a. **Instances when the device used to measure facial velocity (or differential pressure)**



**showed a three-hour average facial velocity of less than 200 feet/min (or .007 in. H<sub>2</sub>O) and any corrective action taken;**

- b. Instances when the criteria for the natural draft openings listed in Condition IV.A.12 are not met;**
  - c. when damper positions on the rotogravure presses changed as compared to the damper position during the most recent capture efficiency test showing compliance;**
  - d. Instances when press cleaning is conducted when the catalytic incinerator is not in operation and in compliance with a daily 95% control efficiency;**
  - e. Any day during which the catalytic incinerator does not meet at least 95% destruction of VOC;**
  - f. Any month during which the calculated annual throughput of VOCs for press cleaning/floor washing in the Press 1 & 2 enclosure exceeds the standard listed in Condition IV.A.4.**
  - g. Any day or month during which the calculated VOC emissions from each rotogravure press (EU ID#01 & 02) exceed the standards listed in Condition IV.A.6.**
  - h. Any day or month during which the calculated daily or annual emissions of VOC for press cleaning/floor washing exceeds the standard listed in Condition IV.A.6. (9 VAC 5-80-110 B)**
4. The permittee shall submit a summary report to the Director, Piedmont Regional Office and to EPA Region III to document the ongoing compliance status of Presses 1 & 2 (EU ID #01 and #02). The report shall contain the information identified in Condition IV.E.5 below and shall be submitted semi-annually, except when:
- a. The Director, Piedmont Regional Office determines that more frequent reporting is necessary to accurately assess the compliance status, or
  - b. The monitoring data collected by the permittee shows that the emission limit has been exceeded, in which case quarterly reports shall be submitted. Once the permittee reports an exceedance, ongoing compliance status reports shall be submitted quarterly until a request to reduce reporting frequency is approved.
- (9 VAC 5-60-90, 40 CFR 63.830(a)(6))
5. The compliance status report shall contain the following information:
- a. The company name and address.
  - b. An identification of the operating parameter that is monitored for compliance determination.
  - c. The emission limitation for each press (EU ID #01 and #02), and the catalyst bed inlet temperature values that correspond to compliance with the emission limitation.

- d. The beginning and ending dates of the reporting period.
- e. A description of the type of process performed.
- f. The total operating time of the presses (EU ID #01 and #02) during the reporting period.
- g. A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes.
- h. A certification by a responsible office that the start-up, shutdown, and malfunction plan contained in Appendix A to this permit were followed.
- i. **If the start-up, shutdown, and malfunction plan was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the reports documenting that the start-up, shutdown, and malfunction plan was not followed.**
- j. A description of any changes in monitoring, processes, or controls since the last reporting period.
- k. The name, title, and signature of the responsible official who is certifying the accuracy of the report, and
- l. The name of the report.

(9 VAC 5-60-90, 40 CFR 63.830(a)(6))

## STREAMLINED REQUIREMENTS

*This facility has, as an applicable requirement, 9 VAC 5 Chapter 40 Part II Article 36, "Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines (Rule 4-36)". This regulation applies to these types of printing operations which are major sources of VOC in the VOC control area of the Richmond area. As this demonstration will show, the facility permit requires more stringent standards than required by this Article due to BACT, LAER, and netting exercises. The following is the specific control requirements from this Article:*

9 VAC 5-40-5080      Standard for volatile organic compounds

- A. No owner or other person shall use or permit the use of any packaging rotogravure, publication rotogravure or flexographic printing line employing an ink or surface coating containing volatile organic compounds unless:
  - 1. The ink or surface coating, as it is applied to the substrate, is a waterborne ink or surface coating;
  - 2. The ink or surface coating, as it is applied to the substrate, is a high solids ink or surface coating;
  - 3. The ink or surface coating, as it is applied to the substrate, is a low-solvent ink or surface coating;or

4. The owner installs and operates an emission control system which achieves the emission reductions specified below in subsection A4a through c of this section. The reduction in volatile organic compound emissions from each printing line shall be at least:
  - b. 65% by weight of volatile organic compounds of all non-compliant inks and surface coatings where a packaging rotogravure printing process is employed.

*Neither a nor c of this section apply to this facility since they have only rotogravure presses that printing packaging material.*

*When compared to the requirements of Condition 8 of the permit dated 10/29/99, the 65% standard is lower than the required overall control efficiency required of each rotogravure press. Therefore, the standards of the permit are more stringent than those required in Article 36 and this Article 36 requirement will be streamlined out of the permit.*

*Facilities subject to Rule 4-36 are subject to the daily recordkeeping requirements of AQP-4. One AQP-4 recordkeeping requirement has been deleted:*

*"The following information for each coating shall be maintained at all times...*

*12. Diluent coating ratio (gallon diluent per gallon coating)"*

*The source commented:*

*"The requirement to identify at specific 'diluent/coating' ratio for each ink should be deleted. There is no fixed value that is used for each ink. During printing, operators add diluent to each ink on an as-needed basis throughout the job. The solvent is added periodically to maintain viscosity requirements. The amount of ink in the sump and the amount of diluent added to the sump cannot practically be tracked when these adds are made. However, the VOCs are tracked by monitoring how much of each ink and how much diluent was issued and returned over the entire print job. This actual usage data and the control system efficiency are used to estimate the emissions. The diluent/coating ratio would only be of value at facilities where compliant coatings are viable and a control system is not required.*

# **EMISSION UNIT APPLICABLE REQUIREMENTS – Printing Operations and Cleaning Operations (Presses 3, 4, 5 & 6)**

## **Limitations**

*The printing operation involves packaging rotogravure, therefore NSPS Subpart QQ, which involves publication rotogravure, does not apply.*

The following limitations for the Printing and Cleaning Operations originate from the October 29, 1999 permit.

7. VOC emissions from the operation and cleaning of presses 3,4,5, and 6, including floor washing, shall be captured by a permanent total enclosure and controlled by a carbon adsorption system having a recovery efficiency of at least 73 percent on a mass basis. The control system shall be provided with adequate access for inspection.  
(9 VAC 5-80-10 H of State Regulations)
8. The daily overall control efficiencies for each of presses 3,4,5, and 6 (determined on a mass basis) for VOC emissions shall equal or exceed 73 percent.  
(9 VAC 5-50-260 of State Regulations)
12. The annual throughput of solvent VOC to be used for press cleaning and floor washing within the press 3,4,5 and 6 permanent total enclosure shall not exceed 18 tons per year, calculated monthly as the sum of the throughput for the previous consecutive 12 months.  
( 9 VAC 5-170-160 of State Regulations)
13. Cleaning of presses and floors within the enclosure shall only be conducted when the associated control equipment for the enclosure is in operation and in compliance with a 73% daily overall control efficiency.  
(9 VAC 5-170-160 of State Regulations)
9. VOC emissions from the operation of each of the presses, including press cleaning and floor washing shall not exceed the limitations specified below:

<u>Press Number</u>	<u>pounds/day<sup>1</sup></u>	<u>tons/yr<sup>2</sup></u>
3	2,590	125.0
4	2,590	125.0
5	2,590	133.0
6	1,150	40.0
<u>Press Nos. 3,4,5 &amp; 6 Enclosure Press Cleaning and Floor Washing</u>		
	23.4 lbs/day <sup>1</sup>	4.3 tons/yr <sup>2</sup>

<sup>1</sup> monthly average

<sup>2</sup> annual emissions, calculated monthly as the sum of the previous consecutive 12 month period

17. The permanent total enclosure shall meet the following criteria:
- a. Any natural draft openings shall be at least 4 equivalent opening diameters from each VOC emitting point;
  - b. The total area of all natural draft openings shall not exceed 5 percent of the surface area of the enclosure's four walls, floor, and ceiling;
  - c. The average facial velocity of air through the natural draft openings shall be at least 200 feet per minute and the direction of flow shall be into the enclosure;
  - d. All access doors and windows shall be closed during the routine operation of the press;
  - e. All of the exhaust gases from the enclosure shall be directed to the carbon bed adsorption system.
- (9 VAC 5-80-30 F of State Regulations)
22. In order to facilitate compliance measurements, test ports shall be maintained at the inlet and outlet ducts of each control device and either at the enclosure exhaust ducts or at the exhaust ducts from each press.  
(9 VAC 5-50-30 F of State Regulations)
24. The inlet gas stream flow rates to the carbon adsorber shall not exceed the design capacity. However, if a greater flow rate is used during the performance test and that greater flow rate resulted in at least a 73% overall control efficiency for each of the presses 3, 4, 5, and 6, and if that test is acceptable to the DEQ, the control device so tested can be operated up to that higher flow rate.  
(9 VAC 5-80-10 H of State Regulation)

*The following limitations were added to Section IV.A due to the applicability of 40 CFR 63 Subpart KK; the facility is major under this subpart (numbering is from Title V permit):*

7. Except where this permit is more restrictive than the applicable requirement, the rotogravure presses (EU ID No. 3-6) shall be operated in compliance with the requirements of 40 CFR 63, Subpart KK.  
(9 VAC 5-60-60 and 9 VAC 5-60-70)
8. HAP emissions shall be limited to no more than five percent of organic HAP applied for the month.  
(40 CFR 63.825)
9. The permittee shall submit a plan to demonstrate continuous compliance with Condition V.A.8 in accordance with the following requirements. The permittee shall:
- a. Submit to the Director, Piedmont Regional Office the compliance status report required by § 63.9(h) of the 40 CFR 63 General Provisions, a plan that:
    - 1) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained.

- 2) Discusses why this parameter is appropriate for demonstrating ongoing compliance, and
- 3) Identifies the specific monitoring procedure.
- b. Set the operating parameter value, or range of values, that demonstrate compliance with Condition V.A.8, and
- c. Conduct monitoring in accordance with the plan submitted to the Director, Piedmont Regional Office unless comments received from the Director, Piedmont Regional Office require an alternate monitoring scheme.

(40 CFR 63.828(a)(5))

- 10. J. W. Fergusson & Sons, Inc. shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The plan shall identify all routine or otherwise predictable control and monitoring system malfunctions. This plan shall be developed by the owner or operator by the source's compliance date for that relevant standard. The plan shall be incorporated by reference into the source's Title V permit (Appendix A).  
(40 CFR 63.9(e)(3))
- 11. The facility shall be subject to the General Provisions (Subpart A) of 40 CFR 63 as outlined in the table below:

Table 1 to Subpart KK of 40 CFR 63: General Provisions Applicability to Subpart KK

Reference	Applies to Subpart KK	Comment
63.1(a)(1)-(a)(4)	Yes.	
63.1(a)(5)	No.	Section reserved.
63.1(a)(6)-(a)(8)	No.	
63.1(a)(9)	No.	Section reserved.
63.1(a)(10)-(a)(14)	Yes.	
63.1(b)(1)	No.	Subpart KK specifies applicability.
63.1(b)(2)-(b)(3)	Yes.	
63.1(c)(1)	Yes.	
63.1(c)(2)	No.	Area sources are not subject to Subpart KK.
63.1(c)(3)	No.	Section reserved.
63.1(c)(4)	Yes.	
63.1(c)(5)	No.	
63.1(d)	No.	Section reserved.
63.1(e)	Yes.	
63.2	Yes.	Additional definitions in Subpart KK.
63.3(a)-(c)	Yes.	
63.4(a)(1)-(a)(3)	Yes.	
63.4(a)(4)	No.	Section reserved.
63.4(a)(5)	Yes.	
63.4(b)-(c)	Yes.	
63.5(a)(1)-(a)(2)	Yes.	
63.5(b)(1)	Yes.	

63.5(b)(2)	No.	Section reserved.
63.5(b)(3)-(b)(5)	Yes.	
63.5(c)	No.	Section reserved.
63.5(d)	Yes.	
63.5(e)	Yes.	
63.5(f)	Yes.	
63.6(a)	Yes.	
63.6(b)(1)-(5)	Yes.	
63.6(b)(6)	No	Section reserved.
63.6(b)(7)	Yes.	
63.6(c)(1)-(2)	Yes.	
63.6(c)(3)-(c)(4)	No.	Sections reserved.
63.6(c)(5)	Yes.	
63.6(d)	No	Section reserved.
63.6(e)	Yes.	Provisions pertaining to start-ups, shutdowns, malfunctions, and CMS do not apply unless add-on control system is used.
63.6(f)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	Subpart KK does not require COMS.
63.6(i)(1)-(i)(14)	Yes.	
63.6(i)(15)	No.	Section reserved.
63.6(i)(16)	Yes.	
63.6(j)	Yes.	
63.7	Yes.	
63.8(a)(1)-(a)(2)	Yes.	
63.8(a)(3)	No	Section reserved.
63.8(a)(4)	No	Subpart KK specifies the use of solvent recovery devices or oxidizers.
63.8(b)	Yes.	
63.8(c)(1)-(c)(3)	Yes.	
63.8(c)(4)	No	Subpart KK specifies CMS sampling requirements.
63.8(c)(5)	No.	Subpart KK does not require COMS
63.8(c)(6)-(c)(8)	Yes.	Provisions for COMS are not applicable.
63.8(d)-(f)	Yes.	
63.8(g)	No.	Subpart KK specifies CMS data reduction requirements
63.9(a)	Yes.	
63.9(b)(1)	Yes.	
63.9(b)(2)	Yes.	Initial notification submission date extended.
63.9(b)(3)-(b)(5)	Yes.	
63.9(c)-(e)	Yes.	
63.9(f)	No.	Subpart KK does not require opacity and visible emissions observations.
63.9(g)	Yes.	Provisions for COMS are not applicable.
63.9(h)(1)-(3)	Yes.	
63.9(h)(4)	No.	Section reserved.
63.9(h)(5)-(6)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)(1)-(b)(3)	Yes.	
63.10(c)(1)	Yes.	
63.10(c)(2)-(c)(4)	No.	Sections reserved.
63.10(c)(5)-(c)(8)	Yes.	
63.10(c)(9)	No.	Section reserved.
63.10(c)(10)-(c)(15)	Yes.	

63.10(d)(1)-(d)(2)	Yes.	
63.10(d)(3)	No	Subpart KK does not require opacity and visible emissions evaluations.
63.10(d)(4)-(d)(5)	Yes.	
63.10(e)	Yes.	Provisions for COMS are not applicable.
63.10(f)	Yes.	
63.11	No	Subpart KK specifies the use of solvent recovery devices or oxidizers.
63.12-63.15	Yes.	

## Monitoring

The following chart delineates the periodic monitoring requirements for EU ID #03, 04, 05, 06, and 09:

Periodic Monitoring Requirements for Presses 3, 4, 5, and 6 and Floor washing				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
Condition #7 of 10/29/99 permit: 100% PTE and catalytic incinerator with destruction efficiency of 73%	100% PTE: facial velocity through openings, or differential pressure	Device to measure facial velocity (or alternatively differential pressure), calibrated and maintained per manufacturer	Once per shift, record reading to ensure above 200 feet/min (or .007 in. H <sub>2</sub> O)	Monthly and semiannually report periods when facial velocity is beneath 200 Ft/min (or differential press. Less than .007 in H <sub>2</sub> O), and corrective action, if necessary
	73% recovery efficiency of carbon bed	VOC inlet and outlet monitoring	daily	Monthly and semiannually when daily average is below 73%
Condition #8 of 10/29/99 permit: Daily overall control efficiency at least 73%	Overall control efficiency 73% (daily basis)	VOC inlet and outlet monitoring	daily	Monthly and semiannually when daily average is below 73%
Condition #9 of 10/29/99 permit: VOC daily/annual press emissions limitation	VOC throughput, capture efficiency, recovery efficiency of carbon bed	Daily recordkeeping of throughput and overall efficiency	Daily recordkeeping in accordance with AQP-4	Monthly and semiannually, periods when VOC emission limits are exceeded
Condition #12 of 10/29/99 permit: Cleaning solvent VOC limited to 18 tons/yr	Tons/yr of solvent VOC used for press cleaning & floor washing in the Press 3-6 enclosure	Solvent VOC content, throughput; total VOC used monthly	Monthly recordkeeping	Monthly and semiannually if 12-month total is exceeded
Condition #17 of 10/29/99 permit: PTE requirements	Facial velocity (or differential pressure)	Device to measure facial velocity (or differential pressure)	Record measurement once per shift	Monthly and semiannually report periods when facial velocity is below 200 feet/min (or differential pressure is less than .007 in H <sub>2</sub> O), and any corrective action taken
40 CFR 63 Subpart KK		No periodic monitoring is necessary for this standard since it was promulgated after 1990.		

*Conditions will be added to the TV permit to reflect the above chart.*

- Each permanent total enclosure shall be verified to meet the requirements of Condition 17 for each day that enclosed presses are in operation, by one of the following methods:



- a. a daily demonstration that the enclosure is unchanged since the last performance test of the enclosure, using test records and installed monitoring devices. The enclosure shall be considered to be unchanged if the daily enclosure air flow monitoring device recorded reading represents an enclosure average facial air velocity that meets the requirements of Condition 17c and the enclosure openings are either in the same position as they were during the most recent enclosure performance test, or shut; or
- b. a performance test of the enclosure using procedures for permanent total enclosures of AQP-3 and EPA Reference Method 204 (ref. 40 CFR 51, Appendix M) demonstrates that the permanent total enclosure requirements of Condition 17 are met for that day.

Daily verification records shall be kept in a format acceptable to the DEQ (Director, Piedmont Region). If an enclosure cannot be demonstrated to meet the permanent total enclosure requirements of Condition 17, a VOC capture efficiency test on each of the enclosed presses or upon the enclosure shall be performed in accordance with AQP-3, EPA Reference Methods (ref. 40 CFR 51, Appendix M) and test procedures acceptable to the DEQ (Director, Piedmont Region) within 60 days thereafter.

(9 VAC 5-80-10 H and 5-80-110 E of State Regulations)

16. Continuing compliance with the 73% daily overall control efficiency requirement for the operation and cleaning of press units 3, 4, 5, and 6 and for press 3, 4, 5, and 6 enclosure floor washing operations shall be demonstrated as specified below:

- a. The carbon adsorption recovery system shall be in operation during all periods of printing and cleaning operations within the enclosure.
- b. The continuous monitor that triggers adsorption/desorption cycles shall be set at the same or lower VOC concentration level as that during the most recent performance test of the carbon adsorption recovery system; and
- c. The daily overall control efficiency for each press and for press cleaning and enclosure floor washing operations shall be calculated using the daily average VOC removal efficiency obtained from continuous monitoring of adsorber inlet and outlet VOC concentrations, and the VOC capture efficiency assigned to the enclosure by the most recent performance test acceptable to the DEQ (Director, Piedmont Regional Office). When a press permanent total enclosure has been verified in accordance with Condition 14 to demonstrate that the requirements of Condition 17 are being met for that day, then the VOC capture efficiency (CAP) assigned to each press and to cleaning operations within the enclosure for that day shall be 100%.

(9 VAC 5-80-10 H of State Regulations, Condition 16 of NSR permit dated 10/29/99)

20. J. W. Fergusson & Sons, Incorporated shall calibrate, maintain, and operate according to the manufacturer's specifications a continuous monitoring system equipped with an adsorption/desorption triggering device to measure and record the concentrations of VOC in the inlet and exhaust vent streams of the carbon bed and shall comply with the following requirements:

- a. The continuous emission monitoring sensors shall be maintained in locations that are representative of the VOC concentrations in the inlet and exhaust vents. The sensor in the exhaust vent shall be located at least two equivalent stack diameters upstream from

the exit to the atmosphere, and protected from interferences due to wind, weather, or other processes.

- b. During any performance test of the carbon adsorption recovery efficiency, J. W. Fergusson & Sons, Incorporated shall record the exhaust VOC concentration level set to trigger the adsorption/desorption cycle.
- c. After the most recent performance test demonstrates that the carbon adsorption system is in compliance with the requirements of Condition 8, J. W. Fergusson & Sons, Incorporated shall determine and record the daily average VOC removal efficiency of the adsorber using the data from the continuous monitoring devices.

(9 VAC 5-50-40 of State Regulations)

21. J. W. Fergusson & Sons, Incorporated shall calibrate, maintain, and operate according to the manufacturer's specifications an air flow monitoring device which continuously measures differential pressure drop across the enclosure boundary or which continuously measures the face velocity of air flow into the enclosure and shall comply with the following requirements:
- a. A performance evaluation of the monitoring device shall be performed concurrently with each performance test of the permanent total enclosure.
  - b. During the concurrent performance evaluation of the air flow monitoring device, J. W. Fergusson & Sons, Incorporated shall record the measurement of the air flow monitoring device which corresponds to 200 square feet per second (or greater) of face velocity air flow into the enclosure, and shall record the open or shut condition of all access doors, windows, and other openings in the permanent total enclosure.
  - c. After the most recent performance test of the enclosure demonstrates that the permanent total enclosure is in compliance with the requirements of Condition 14, J. W. Fergusson & Sons, Incorporated shall determine and record the reading of the air flow monitoring device and the open or shut condition of the enclosure openings once daily under representative operating conditions during each day in which presses within the enclosure are operated.

(9 VAC 5-80-30 H, Appendix S of State Regulations)

25. Continuing compliance with VOC emission limits for each of the presses and the associated press cleaning and floor washing operations within each enclosure shall be determined as follows:
- a. Compliance with daily VOC emission limits shall be determined for each calendar day in the month, within 30 days of the end of the month, by calculating:

$$\frac{DTE_3 \text{ through } DTE_6}{DTE_6} = \text{Daily Total VOC emissions (mass) emitted from each of presses 3, 4, 5, and 6, to be calculated as indicated by the following formulas:}$$

$$DTE_3 = DTU_3 \times (100\% - DOCE_3) \div 100$$

$$DTE_4 = DTU_4 \times (100\% - DOCE_4) \div 100$$

$$DTE_5 = DTU_5 \times (100\% - DOCE_5) \div 100$$

$$DTE_6 = DTU_6 \times (100\% - DOCE_6) \div 100$$

$DTE_{\text{clean3,4,5,6}}$  = Daily Total VOC Emissions (mass) from cleaning within the press 3, 4, 5, and 6 enclosure, calculated by the following formula:

$$DTE_{\text{clean3,4,5,6}} = DTU_{\text{clean3,4,5,6}} \times (100\% - DOCE_{\text{encl3,4,5,6}}) \div 100$$

$DTU_3$  through  $DTU_6$  = Daily Total VOC Used (mass) at each press

$DTU_{\text{clean3,4,5,6}}$  = Daily Total VOC Used (mass) to clean presses and floors within the press 3, 4, 5, and 6 enclosure, respectively.

$CAP_3$  through  $CAP_6$  = Capture Efficiency (%) for each of presses 3, 4, 5, and 6.

$CAP_{\text{encl3,4,5,6}}$  = Capture Efficiency (%) of press 3, 4, 5, and 6 enclosure.

$DOCE_3$  through  $DOCE_6$  = Daily Overall Control Efficiency (%) for each of presses 3, 4, 5, and 6, as calculated by the following formulas:

$$DOCE_3 = CAP_3 \times DAR \div 100$$

$$DOCE_4 = CAP_4 \times DAR \div 100$$

$$DOCE_5 = CAP_5 \times DAR \div 100$$

$$DOCE_6 = CAP_6 \times DAR \div 100$$

DAR = Daily Average VOC Removal Efficiency (%) of the carbon adsorption system using the data from the most recent performance test.

- b. Compliance with annual VOC emission limits for each press and for press leaning and floor washing from each enclosure shall be determined monthly, within 30 days of the end of the month, by calculating the annual VOC emissions as the sum of daily VOC emissions for each of the presses and as the sum of daily VOC emissions for cleaning and floor washing within each enclosure, for the previous consecutive 12 months.  
(9 VAC 5-80-10 H and 9 VAC 5-50-20 of State Regulations)

## Recordkeeping

14. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
- a. Daily records of DTU, DTE, CAP, and DOCE for printing operations at each press and floor cleaning operations within each enclosure, and records of DAR for the carbon adsorption unit as required by Condition 25.

- b. Monthly records of annual VOC emissions from the operation of each of the presses, and annual VOC emissions from press cleaning and floor washing operations within each enclosure.
- c. Daily records of enclosure verifications.
- d. Continuous monitoring device data and calibrations.
- e. The total number of days, if any, for which the permanent total enclosures could not be verified using installed monitoring devices and test records while the presses were in operation or being cleaned, or while the enclosure floors were being washed.
- f. Any instances of operation or cleaning of the enclosed presses, or of floor washing within the enclosures, without the associated control device being in operation.
- g. The total number of hours, if any, during which each control device monitoring sensor and system was malfunctioning or not in operation while presses monitored by that sensor or system were in operation.
- h. Total number of days that compliance was not achieved with Conditions 2 and 5, if any, and total tons of excess emissions from each source for each day not in compliance with those conditions.
- i. **Records needed to demonstrate compliance with 40 CFR 63 Subpart KK standards; these records may include material usage, HAP usage, volatile matter usage, and solid usage. These records may also include continuous emission monitor data (temperature and facial velocity or pressure drop), and control device data.**
- j. **A written copy of the facility's startup, shutdown, and malfunction plan. (If the plan is revised, J. W. Fergusson shall keep previous, (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record).**
- k. **Records of all maintenance performed on the enclosures and ductwork, carbon bed, and monitoring equipment.**
- l. **Records of the occurrence, duration, and cause (if known) of each malfunction of the process, air pollution control equipment, and monitoring equipment.**
- m. **Records of actions taken during periods of malfunction when such actions are inconsistent with the startup, shutdown and malfunction plan.**
- n. **Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the startup, shutdown and malfunction plan.**
- o. **Test reports documenting results of all performance tests.**
- p. **All measurements as may be necessary to determine the conditions during the performance tests.**
- q. **All documentation supporting the notifications and reports required by 40 CFR 63.9, 40 CFR 63.10, and 40 CFR 63.830.**

- r. Records of any instance of noncompliance with any permit condition.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110 E of State Regulations, Condition 34 of NSR permit issued 10/29/99)

*In addition, the requirements of AQP-4, "Procedures for Maintaining Records for Surface Coating Operations and Graphic Arts Printing Procedures" were incorporated as Condition 2 of the Recordkeeping requirements in the Title V Permit:*

3. Records required by "Procedures for Maintaining Records for Surface Coating Operations and Graphic Arts Printing Processes" (AQP-4):

- a. The following information shall be maintained at all times:

- 1) Coating application system number.
- 2) Hours of operation per day and per year.
- 3) Method of application.
- 4) Number and types of coats applied to the substrate.
- 5) Drying method.
- 6) Substrate type.

- b. The following information for each coating shall be maintained at all times:

- 1) Supplier name, coater name and identification number.
- 2) Coating density (pounds per gallon).
- 3) Volatile content of coating as supplied (percent by weight).
- 4) Water content of coating as supplied (percent by weight).
- 5) Exempt solvent content of coating as supplied (percent by weight).
- 6) Solids content of coating as supplied (percent by volume).
- 7) Name of diluent added, if any.
- 8) Identification number of diluent.
- 9) Diluent volatile organic compound density (pounds per gallon).
- 10) Volatile organic compound content of diluent (percent by weight).
- 11) Exempt solvent content of diluent (percent by weight).

c. The following information for each coating application system shall be maintained on a daily basis

- 1) Coating application system number.
- 2) Time period of each application run.
- 3) Coating identification number.
- 4) Amount of coating used.
- 5) Diluent and cleanup solvent identification numbers.
- 6) Amount of diluent used.
- 7) Amount of cleanup solvents used.
- 8) Calculated volatile organic compound emissions.

d. The following records shall be maintained for the carbon adsorber:

- 1) Control device identification number and model number.
- 2) Manufacturer.
- 3) Installation date.
- 4) Coating application systems controlled.
- 5) Whether or not the control device is always in operation when the system is serves is in operation.
- 6) Type of control device.
- 7) Destruction or removal efficiency.
- 8) Date tested (if not tested, method of determining destruction efficiency).
- 9) Emission test results, including inlet volatile organic compound concentration (parts per million), outlet VOC concentration (parts per million), method of concentration determination, and date of determination.
- 10) Type and location of capture system.
- 11) Capture efficiency (percent).

## Reporting

15. For every month in which J. W. Fergusson & Sons, Incorporated is not in compliance with any condition of this permit for any part of the month, J. W. Fergusson & Sons, Incorporated shall submit a report in writing to the DEQ (Director, Piedmont Regional Office) within 30 days following the end of the month, stating the applicable permit condition, describing the circumstances of the

noncompliance with the permit condition, and containing any pertinent records from the list of required records in Condition 14. Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it restrict in any way the DEQ's authority to enforce the conditions of this permit pursuant to Section 113 of the Clean Air Act. (9 VAC 5-50-50 E of State Regulations, Condition 26 of NSR permit dated 10/29/99)

*The following Conditions were added from 40 CFR 63 Subpart KK; additional reporting requirements are contained in the General Provisions found in Table 1. Those found below were highlighted in §63.830.*

2. If actions taken by the permittee during a start-up, shutdown, or malfunction (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the start-up, shutdown, and malfunction plan (Appendix A), J. W. Fergusson & Sons shall submit a start-up, shutdown and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, and shall be submitted semi-annually.

Separate start-up, shutdown, or malfunction reports are not required if the information is included in the report specified in Condition V.E.4.  
(9 VAC 5-60-90, 40 CFR 63.830(a)(5))

**The following was added for periodic monitoring and reporting:**

3. **The permittee shall submit reports semi-annually to the Director, Piedmont Regional Office of the following:**
  - a. **Instances when the device used to measure facial velocity (or differential pressure) showed a three-hour average facial velocity of less than 200 feet/min (or .007 in. H<sub>2</sub>O) and any corrective action taken;**
  - b. **Instances when the criteria for the natural draft openings listed in Condition V.A.11 are not met;**
  - c. **Instances when press cleaning is conducted when the carbon bed is not in operation and in compliance with a daily 73% control efficiency;**
  - d. **Any day during which the carbon bed does not meet at a VOC recovery efficiency of at least 73%;**
  - e. **Any month during which the calculated annual throughput of VOCs for press cleaning/floor washing in the Presses 3-6 enclosure exceeds the standard listed in Condition V.A.4.**
  - f. **Any day or month during which the calculated VOC emissions from each rotogravure press (#03-06) exceed the standards listed in Condition V.A.6.**
  - g. **Any day or month during which the calculated daily or annual emissions of VOC for press cleaning/floor washing exceeds the standard listed in Condition V.A.6.**

**(9 VAC 5-80-110 B)**

4. The permittee shall submit a summary report to the Director, Piedmont Regional Office and to EPA Region III to document the ongoing compliance status of Presses 3, 4, 5, and 6 (EU ID #03-#06). The report shall contain the information identified in Condition V.E.5 below and shall be submitted semi-annually, except when:
- a. The Director, Piedmont Regional Office determines that more frequent reporting is necessary to accurately assess the compliance status, or
  - b. The monitoring data collected by the permittee shows that the emission limit has been exceeded, in which case quarterly reports shall be submitted. Once the permittee reports an exceedance, ongoing compliance status reports shall be submitted quarterly until a request to reduce reporting frequency is approved.

(9 VAC 5-60-90, 40 CFR 63.830(a)(6))

5. The compliance status report shall contain the following information:
- a. The company name and address.
  - b. An identification of the operating parameter that is monitored for compliance determination.
  - c. The emission limitation for each press (EU ID #03-#06), and the catalyst bed inlet temperature values that correspond to compliance with the emission limitation.
  - d. The beginning and ending dates of the reporting period.
  - e. A description of the type of process performed.
  - f. The total operating time of the presses (EU ID #03-#06) during the reporting period.
  - g. A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes.
  - h. A certification by a responsible officer that the start-up, shutdown, and malfunction plan contained in Appendix A to this permit was followed for the source.
  - i. If the start-up, shutdown, and malfunction plan contained in Appendix A to this permit was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the reports documenting that the start-up, shutdown, and malfunction plan was not followed.
  - j. A description of any changes in monitoring, processes, or controls since the last reporting period.
  - k. The name, title, and signature of the responsible official who is certifying the accuracy of



the report, and

- I. The name of the report.

(9 VAC 5-60-90, 40 CFR 63.830(a)(6))

## STREAMLINED REQUIREMENTS

*This facility has, as an applicable requirement, 9 VAC 5 Chapter 40 Part II Article 36, "Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines (Rule 4-36)". This regulation applies to these types of printing operations which are major sources of VOC in the VOC control area of the Richmond area. As this demonstration will show, the state operating permit requires more stringent standards than required by this Article due to BACT, LAER, and netting exercises. The following is the specific control requirements from this Article:*

9 VAC 5-40-5080          Standard for volatile organic compounds

- B. No owner or other person shall use or permit the use of any packaging rotogravure, publication rotogravure or flexographic printing line employing an ink or surface coating containing volatile organic compounds unless:
  1. The ink or surface coating, as it is applied to the substrate, is a waterborne ink or surface coating;
  2. The ink or surface coating, as it is applied to the substrate, is a high solids ink or surface coating;
  3. The ink or surface coating, as it is applied to the substrate, is a low-solvent ink or surface coating;  
or
  4. The owner installs and operates an emission control system which achieves the emission reductions specified below in subsection A4a through c of this section. The reduction in volatile organic compound emissions from each printing line shall be at least:
    - b. 65% by weight of volatile organic compounds of all non-compliant inks and surface coatings where a packaging rotogravure printing process is employed.

*Neither a nor c of this section apply to this facility since they have only rotogravure presses that printing packaging material.*

*When compared to the requirements of Condition 8 of the permit dated 10/29/99, the 65% standard is lower than the required overall control efficiency required of each rotogravure press. Therefore, the standards of the permit are more stringent than those required in Article 36 and this Article 36 requirement will be streamlined out of the permit.*

*Facilities subject to Rule 4-36 are subject to the daily recordkeeping requirements of AQP-4. One AQP-4 recordkeeping requirement for the coating has been deleted:*

"The following information for each coating shall be maintained at all times...

12. Diluent coating ratio (gallon diluent per gallon coating)"

*The source commented:*

*"The requirement to identify at specific 'diluent/coating' ratio for each ink should be deleted. There is no fixed value that is used for each ink. During printing, operators add diluent to each ink on an as-needed basis throughout the job. The solvent is added periodically to maintain viscosity requirements.*

*The amount of ink in the sump and the amount of diluent added to the sump cannot practically be tracked when these adds are made. However, the VOCs are tracked by monitoring how much of each ink and how much diluent was issued and returned over the entire print job. This actual usage data and the control system efficiency are used to estimate the emissions. The diluent/coating ratio would only be of value at facilities where compliant coatings are viable and a control system is not required.*

*Additionally, an AQP-4 requirement that the source keep a record of the "design pressure drop across the adsorber a breakthrough" has been deleted.*

*The source commented:*

*"We know of no such value. Pressure drop is typically calculated based on carbon size and carbon bed depth. It is not a function of adsorber bed saturation or an indicator of breakthrough."*

*Since the source continuously monitors the adsorber inlet and outlet VOC concentrations, this recordkeeping requirement has been streamlined from the permit.*

**EMISSION UNIT APPLICABLE REQUIREMENTS : Automated Parts Washing System,  
Progressive Recovery, Inc. SWS-400(EU ID #07)**

**Limitations**

The following limitations for the Printing and Cleaning Operations originate from the October 29, 1999 permit.

4. Volatile organic compound (VOC) emissions from the operation of the Progressive Recovery, Inc. automated parts washing system shall be controlled by the implementation of control requirements from 9 VAC 5-40-3290 C and D.  
(9 VAC 5-80-10 H of State Regulations)
9. VOC emissions from the operation of the Progressive Recovery, Inc. automated parts washing system shall not exceed 7.9 lbs/cycle (average of monthly records), nor 15.7 lbs/hr, nor 188.9 lbs/day (calculated daily), nor 34.5 tons/yr (annual average, calculated monthly as the sum of over the previous consecutive 12 months).  
(9 VAC 5-50 160 of State Regulations)
31. J. W. Fergusson & Sons, Incorporated shall equip the Progressive Recovery, Inc. automated parts washing system with a control method that will remove, destroy, or prevent the discharge into the atmosphere of at least 85 percent by weight of all volatile organic compound emissions.  
(9 VAC 5-50-10, 9 VAC 5-40-3280, 9 VAC 5-40-3290 C and D of State Regulations)
32. Operation of the Progressive Recovery, Inc. automated parts washer shall not exceed:
  - a. 24 wash cycles per day, calculated daily as the sum of completed wash cycles over the previous 24 hour period; and
  - b. 8760 wash cycles per year, calculated monthly as the sum of wash cycles over the previous consecutive 12 months.  
(9 VAC 5-170-160 of State Regulations)

**The following condition was added to delineate the control methods required to meet the standard in Condition 31 of the 10/29/99 permit (Title V permit Condition VI.A.3):**

4. **The requirement in Condition VI.A.3. shall be achieved by using the following methods:**
  - a. **Reservoirs shall be covered or enclosed. Covers shall be designed so that they can be easily operated with one hand. Enclosed remote reservoirs should be designed such that they provide reduction effectiveness equivalent to that of a cover.**
  - b. **External or internal drainage facilities shall be provided to collect and return the solvent to a closed container or a solvent cleaning machine. If solvent volatility is greater than 0.6 psi measured at 100 °F, then the drainage facilities shall be internal, so that parts are enclosed under the cover while draining. The drainage system may be external for applications where an internal type cannot fit into the cleaning system.**

- c. **A permanent label, summarizing the operating procedures listed below, shall be placed in a conspicuous location on or near the maintenance shop cold cleaning degreaser.**
- d. **If used, the solvent spray should be a solid stream and not a fine, atomized, or shower type spray, and at a pressure that does not cause excessive splashing.**
- e. **If a solvent volatility is greater than 0.6 psi measured at 100 °F, or if the solvent is heated above 120 °F, then the Progressive Recovery Parts washer (ref #07) shall be equipped with one of the following vapor control methods:**
  - 1) **Freeboard ratio that is equal to or greater than 0.7;**
  - 2) **Water cover (solvent should be insoluble in and heavier than water);**
  - 3) **Refrigerated chiller(a secondary set of condensing coils operating with a coolant of less than 40 °F);**
  - 4) **Carbon adsorption system, with ventilation of 50 cfm/square foot or greater of air/vapor area (when down-time covers are open), and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle; or**
  - 5) **Any method of equal or greater control efficiency to the methods in Condition VI.A.4.e(1) through (4), provided the method is approved by the board.**
- f. **Waste solvent should not be disposed of or transferred to another party, such that greater than 20% of the waste (by weight) can evaporate into the atmosphere. Store waste solvent only in closed containers.**
- g. **The parts washer cover should be closed whenever not handling parts in the cleaner.**
- h. **Parts shall drain for at least 15 seconds or until dripping ceases.**
- i. **Disposal of waste solvent from solvent metal cleaning operations should be by either reclamation (either by outside services or in house) or incineration.**

**(9 VAC 5-40-3290 C.1)**

## **Monitoring**

The following chart delineates the periodic monitoring requirements for EU ID #07:

Periodic Monitoring Requirements for the Progressive Recovery, Inc. Automated Parts Washer				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
VOC emissions controlled by use of control methods with an efficiency of at least 85%	Work practices, operational methods described in 9 VAC 5-40-3290 C	Monthly, of area inspections and solvent information	Monthly, of area inspections and solvent information	Semi-annually, of noncompliance and training conducted
VOC emissions limited to 7.9 lb VOC/cycle, 15.7 lbs/hr, 188.9 lbs/day, 34.5 tons/yr	Throughput/work practices/control efficiency/emissions	Daily records of calculated VOC losses	Daily and monthly (summation of daily calculations)	Semiannually, daily or monthly exceedances
Operation shall not exceed 24 wash cycles/day, nor 8760 wash cycles/year	Number of wash cycles	Daily calculations will show number of wash cycles	Number of cycles recorded daily as part of VOC loss calculations	Semiannually, daily or monthly exceedances

**Conditions will be added to the TV permit to reflect the above chart.**

30. Continuing compliance with VOC emission limits for the Progressive Recovery, Inc. automated parts washing system shall be determined monthly, within 30 days of the end of the month, as follows:
- VOC emissions (lbs/cycle)<sup>1</sup> =  $R_P$  (lbs/cycle) =  $P_P$  (lbs/cycle);
  - VOC emissions (lbs/hr)<sup>1</sup> =  $P_P$  (lbs/cycle) x 2 cycles/hr;
  - VOC emissions (lbs/day) =  $P_P$  (lbs/cycle) x N (cycles for the day) and shall be calculated for each day of operation during the month; and
  - VOC emissions (tons/yr) =  $P_P$  (lbs/cycle) x N (cycles for the previous consecutive 12 months);

where,  $R_P$  (lbs VOC emissions/cycle) =  $P_P$  (lbs VOC inventory loss/cycle)

$$P_P \text{ (lbs VOC inventory loss/cycle)} = \frac{\text{(lbs VOC inventory loss during the calendar month)}}{\text{number of wash cycles during the calendar month}}$$

The monthly determination of inventory loss from the Progressive Recovery, Inc. system shall include, at a minimum, the amount of solvent VOC remaining in the wash system, the makeup solvent VOC added, and the waste solvent VOC removed from the wash system. The value of  $R_P$  shall be determined monthly unless the calculated value of  $R_P$  is within 5 percent of the average of the three previous consecutive calculated values of  $R_P$ . Then the value of  $R_P$  may be determined once annually until the calculated value of  $R_P$  is no longer within 5 percent of the average of the three previous consecutive calculated values of  $R_P$ .  
(9 VAC 5-50-20 and 9 VAC 5-80-10 H of State Regulations)

### Recordkeeping

34. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
- Monthly records of solvent VOC inventory loss from the Progressive Recovery, Inc. automated parts washing system;

- b. Daily, and annual records of the number of wash cycles for the Progressive Recovery, Inc. automated parts washing system;
- c. Monthly records of daily and annual VOC emissions from the Progressive Recovery, Inc. automated parts washing system.
- d. The four (4) most recent (monthly or annual) calculated values of lbs. of solvent VOC emissions per wash cycle ( $R_p$ ) for the Progressive Recovery, Inc. automated parts washing system, and the calculated average of the earliest three of the four.

**The following recordkeeping requirements were added for periodic monitoring:**

- 5. Total number of days that compliance was not achieved with Condition VI.A.2 and VI.A.5, if any, and total tons of excess emissions for each day not in compliance with these conditions.**
- 6. Checklists documenting all monthly inspections for work practice standards pertaining to the Progressive Recovery, Inc. automated parts washing system (EU ID #07), as required by Condition VI.A.2.**

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.  
(9 VAC 5-50-50 and 9 VAC 5-80-110 E of State Regulations)

## **Reporting**

- 26. For every month in which J. W. Fergusson & Sons, Incorporated is not in compliance with any condition of this permit for any part of the month, J. W. Fergusson & Sons, Incorporated shall submit a report in writing to the DEQ (Director, Piedmont Regional Office) within 30 days following the end of the month, stating the applicable permit condition, describing the circumstances of the noncompliance with the permit condition, and containing any pertinent records from the list of required records in Condition 6. Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it restrict in any way the DEQ's authority to enforce the conditions of this permit pursuant to Section 113 of the Clean Air Act.  
(9 VAC 5-50-50 E of State Regulations)

**The following is the reporting requirement for periodic monitoring:**

- 2. **The permittee shall submit reports semi-annually to the Director, Piedmont Regional Office of the following:**
  - a. **Instances when monthly inspections of work practices for the Progressive Recovery, Inc. automated parts washing system (EU ID #07) showed deviation from required practices, and actions taken, including training of personnel, to rectify the situation and prevent future occurrences.**
  - b. **Instances when the Progressive Recovery, Inc. automated parts washing system**

**(EU ID #07) is operated without the associated control device as required by Condition VI.A.1.**

- c. Any day or month during which the calculated VOC emissions from the Progressive Recovery, Inc. automated parts washing system (EU ID #07) exceeds the standards listed in Condition VI.A.2.**
- d. Any day during which the number of wash cycles run in the Progressive Recovery, Inc. automated parts washing system (EU ID #07) exceeds the standards listed in Condition VI.A.5.  
(9 VAC 5-80-110 B)**

**EMISSION UNIT APPLICABLE REQUIREMENTS - Automated Parts Washing System,  
Renzmann (EU ID #10)**

**Limitations**

The following limitations for the Printing and Cleaning Operations originate from the October 29, 1999 permit:

5. Volatile organic compound (VOC) emissions from the operation of the Renzmann automated parts washing system shall be controlled by the totally enclosed operating design of the system, compliance with the permit control and operating requirements, and by either a carbon adsorption system having a recovery efficiency of at least 95 percent on a mass basis or a catalytic incinerator having a destruction efficiency of 95 percent on a mass basis. The emission control system shall be provided with adequate access for inspection.  
(9 VAC 5-80-10 of State Regulations)

9. VOC emissions from the operation Renzmann automated parts washing system shall not exceed the limits specified below:

18.6 lbs/hr                      371.7 lbs/day    34.1 tons/yr

(9 VAC 5-50-260 of State Regulations)

18. Operation of the Renzmann automated parts washing system shall not exceed 20 wash cycles per day, calculated daily as the sum of completed wash cycles over the previous 24 hour period.  
(9 VAC 5-80-10 H of State Regulations)

26. J. W. Fergusson & Sons, Incorporated shall equip the Renzmann automated parts washing system with control methods that will remove, destroy, or prevent from discharge into the atmosphere at least 85 percent by weight of all VOC. Compliance with this emission limit shall be demonstrated by compliance with the following control and operating requirements:

- a. The washing system shall be provided with the capability to be totally enclosed while it is operating. Door seals and enclosed reservoir covers shall be maintained to prevent excess emissions.
- b. The washing system shall be provided with internal drainage facilities which returns solvent to an internal solvent reservoir, so that parts are totally enclosed while they are draining.
- c. A permanent label summarizing the operating procedures shall be placed in a conspicuous location near the operating controls of the washing system.
- d. All VOC emissions vented from the wash chamber shall be ducted either to an operating carbon adsorption system which demonstrates a recovery efficiency (DAR) of at least 95 percent by weight or to an operating catalytic incinerator which demonstrates a daily destruction efficiency (DDE) of at least 95 percent by weight.
- e. Waste solvent from the Renzmann parts washer shall be stored only in closed containers and shall be transferred only to closed containers.
- f. The washing system door and covers shall remain closed except when parts are being loaded or unloaded from the system or maintenance on the washing system is in



progress.

- g. Cleaned parts shall be allowed to drain until the operating cycle of the washing system has been completed.
- h. Waste solvent from the washing system shall be reclaimed or incinerated.

(9 VAC 5-50-10, 9 VAC 5-40-3280, and 9 VAC 5-40-3290 C and D of State Regulations)

### Monitoring

The following chart delineates the periodic monitoring requirements for Reference No. 10:

Periodic Monitoring Requirements for the Renzmann Automated Parts Washer				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
VOC emissions controlled by enclosure and either catalytic incinerator or carbon adsorber with control efficiency of 95%	Work practices, operational methods described in 9 VAC 5-40-3290 C	Monthly, of area inspections and solvent information	Monthly, of area inspections and solvent information	Semi-annually, of noncompliance and training conducted
Daily overall control efficiency at least 85%	Work practices, operational methods described in 9 VAC 5-40-3290 C	Monthly, of area inspections and solvent information	Monthly, of area inspections and solvent information	Semi-annually, of noncompliance and training conducted
VOC emissions limited to 18.6 lbs/hr, 371.7 lbs/day, and 34.1 tons/yr	Throughput/work practices/control efficiency/emissions	Daily records of calculated VOC losses	Daily and monthly (summation of daily calculations)	Semiannually, daily or monthly exceedances
Operation limited to 20 cycles/day	Number of wash cycles	Daily calculations will show number of wash cycles	Number of cycles recorded daily as part of VOC loss calculations	Semiannually, daily or monthly exceedances

**Conditions will be added to the TV permit to reflect the above chart.**

29. Continuing compliance with VOC emission limits for the Renzmann parts washing system shall be determined monthly, within 30 days of the end of the month, as follows:

- a. VOC emissions (lbs/hr) =  $R_R$  (lbs/cycle) x 1 cycle/hr;
- b. VOC emissions (lbs/day) =  $R_R$  (lbs/cycle) x N (cycles for the day) and shall be calculated for each day of operation during the month;
- c. VOC emissions (lbs/month) =  $\Sigma$ VOC emissions (lbs/day), and shall be calculated as the sum over the calendar month; and
- d. VOC emissions (tons/yr) =  $\Sigma$ VOC emissions (lbs/month), and shall be calculated as the sum for the previous consecutive 12 months;

where,

$$R_R \text{ (lbs VOC emissions/cycle)} = P_R - \left[ \frac{DE}{100} \times \frac{C \times Q \times M \times 10^6}{GD} \right]$$

$$P_R \text{ (lbs VOC inventory loss/cycle)} = \frac{\text{(lbs VOC inventory loss in calendar month)}}{\text{no. of wash cycles during calendar month}}$$

DE (%) = daily control device efficiency = DDE or DAR, as applicable

C (ppmv) = average Renzmann cycle purge air VOC concentration  
(lbmole/10<sup>6</sup> lbmoles)

Q (scf/cycle) = average cycle purge air volume @ standard conditions

M (lbs/lbmole) = average molecular weight of solvent VOC

GD (scf/lbmole) = molar gas density @ standard conditions

The monthly determination of inventory loss from the Renzmann system shall include, at minimum, the amount of solvent VOC remaining in the wash system, the makeup solvent VOC added and the waste solvent VOC removed from the wash system. ~~The values of C, Q, and M shall be determined within 60 days of the date of this permit using test methods approved by the Director, Piedmont Region.~~ The values of C, Q, and M shall be redetermined if an annual analysis of the recovered solvent predicts that the VOC composite partial vapor pressure has changed by 5 percent. The values of  $P_R$  and  $R_R$  shall be determined monthly.  
(9 VAC 5-50-20 and 9 VAC 5-80-10 H of State Regulations)

### Recordkeeping

34. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
- Monthly records of solvent VOC inventory loss from the Renzmann automated parts washing system (EU ID #10).
  - Daily and annual records of the number of wash cycles for the Renzmann automatic parts washing system (EU ID #10).
  - Monthly records of daily and annual VOC emissions from Renzmann automatic parts washing system (EU ID #10).
  - Monthly calculation of the daily values of pounds of solvent VOC emissions per wash cycle ( $R_R$ ) for the Renzmann, the most recent test values of C, Q, and M, the theoretical VOC partial vapor pressure of the recovered solvent when C, Q, and M were last determined, and the last annual evaluation of the recovered solvent changes to determine the magnitude of theoretical VOC composite partial vapor pressure changes.
  - Any instance of operation of the Renzmann automated parts washing system (EU ID #10) without the associated control device being in operation.
  - ~~Records of any instance of noncompliance with any permit condition.~~

**The following recordkeeping requirements were added for periodic monitoring:**

5. **Any instance of operation of the Renzmann automated parts washing system without the associated control device being in operation as required by Condition VII.A.1.**
6. **Any periods of excess emissions calculated in Condition VII.B.1 .**
7. **Total number of days that compliance was not achieved with Condition VII.A.2, if any, and total tons of excess emissions for each day not in compliance with this condition.**
8. **Checklists documenting all monthly inspections for work practice standards pertaining to the Renzmann, as required by Condition VII.B.2.**

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110 E of State Regulations)

#### **Reporting**

26. For every month in which J. W. Fergusson & Sons, Incorporated is not in compliance with any condition of this permit for any part of the month, J. W. Fergusson & Sons, Incorporated shall submit a report in writing to the DEQ (Director, Piedmont Regional Office) within 30 days following the end of the month, stating the applicable permit condition, describing the circumstances of the noncompliance with the permit condition, and containing any pertinent records from the list of required records in Condition 6. Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it restrict in any way the DEQ's authority to enforce the conditions of this permit pursuant to Section 113 of the Clean Air Act.  
(9 VAC 5-50-50 E of State Regulations)

**The following was added for periodic monitoring:**

2. **The permittee shall submit reports semi-annually to the Director, Piedmont Regional Office of the following:**
  - a. **Instances when monthly inspections of work practices for the Renzmann automated parts washing system (EU ID #10) showed deviation from required practices, and actions taken, including training of personnel, to rectify the situation and prevent future occurrences.**
  - b. **Instances when the Renzmann automated parts washing system (EU ID #10) is operated without the associated control device as required by Condition VII.A.1.**
  - c. **Any day or month during which the calculated VOC emissions from the Renzmann automated parts washing system (EU ID #10) exceeds the standards listed in Condition VII.A.2.**
  - d. **Any day during which the number of wash cycles run in the Renzmann automated parts washing system (EU ID #10) exceeds the standards listed in Condition VII.A.3.**

(9 VAC 5-80-110 B)

**EMISSION UNIT APPLICABLE REQUIREMENTS: Make-ready Room (EU ID #11)**

*Conditions taken from 10/29/99 permit:*

**Limitations**

4. Volatile Organic Compound (VOC) emissions from the operation of the Make-ready Room (the manual cylinder wash station, and the doctor blade wash tank) shall be controlled by the implementation of control and operating requirements from 9 VAC 5-40-3290 C and D. (9 VAC 5-80-10 H of State Regulations)

2. Volatile Organic Compound emissions from the operation of the Make-ready Room (cylinder wash, doctor blade, floor washing) shall not exceed the limits specified below:

Volatile Organic  
Compounds

113.3 lbs/day<sup>1</sup> 4.7 tons/yr<sup>2</sup>

(9 VAC 5-50-260 of State Regulations)

*The following was added to delineate the requirements of Rule 4-24:*

3. J. W. Fergusson & Sons, Incorporated shall equip the manual cylinder wash station and doctor blade wash tank with a control method that will remove, destroy, or prevent the discharge into the atmosphere of at least 85 percent by weight of all volatile organic compound emissions. Compliance with this emission standard will be demonstrated by compliance with the applicable control and operating requirements of 9 VAC 5-40-3290 C. (9 VAC 5-50-10, 9 VAC 5-40-3280, 9 VAC 5-40-3290 C and D, Condition 31 of NSR permit issued 10/29/99)

4. The requirement in Condition VIII.A.3. shall be achieved by using the following methods:

a. ~~The Make-ready room manual cylinder wash station and doctor blade wash tank (EU ID #11) shall be equipped with one of the following:~~

(1) ~~A refrigerated chiller (a secondary set of condensing coils operated with a coolant of less than 40 °F), or~~

(2) ~~A carbon adsorption system, with ventilation of 50 cfm/cubic foot or greater of conveyor opening area (when down-time covers are open), and exhausting less than 25 ppm of solvent by volume, averaged over a complete adsorption cycle.~~

a. Reservoirs shall be covered or enclosed. Covers shall be designed so that they can be easily operated with one hand. Enclosed remote reservoirs should be designed such that they provide reduction effectiveness equivalent to that of a cover.

b. External or internal drainage facilities shall be provided to collect and return the solvent to a closed container or a solvent cleaning machine. If solvent volatility is greater than 0.6 psi measured at 100 °F, then the drainage facilities shall be internal, so that parts are enclosed under the cover while draining. The drainage system may be external for applications where an internal type cannot fit into the cleaning system.

<sup>1</sup>annual emissions, calculated monthly as the sum of the previous consecutive 12 months

<sup>2</sup>average of monthly records

- c. A permanent label, summarizing the operating procedures listed below, shall be placed in a conspicuous location on or near the maintenance shop cold cleaning degreaser.
- d. If used, the solvent spray should be a solid stream and not a fine, atomized, or shower type spray, and at a pressure that does not cause excessive splashing.
- f. Waste solvent should not be disposed of or transferred to another party, such that greater than 20% of the waste (by weight) can evaporate into the atmosphere. Store waste solvent only in closed containers.
- g. The parts washer cover should be closed whenever not handling parts in the cleaner.
- h. Parts shall drain for at least 15 seconds or until dripping ceases.
- i. Disposal of waste solvent from solvent metal cleaning operations should be by either reclamation (either by outside services or in house) or incineration.

### Monitoring

*The following monitoring requirement was taken from the 10/29/99 permit:*

35. Continuing compliance with the Make-ready Room VOC emission limits (for the doctor blade wash tank, floor washing, and manual cylinder cleaning) shall be determined monthly, within 30 days of the end of the month, as follows:

- a. VOC emissions (lbs/day) =

$$\frac{\text{monthly VOC inventory loss (lbs) of Make-ready Room sources (incl. Floor washing)}}{\text{days of operation (days) of Make-ready Room emissions sources (incl. Floor washing)}}$$

- b. VOC emissions (tons/yr) =

$$\frac{\Sigma \text{solvent VOC inventory loss over the previous consecutive 12 months (lbs VOC/yr)}}{2000 \text{ lbs/ton}}$$

(9 VAC 5-50-20 and 9 VAC 5-80-10 H, Condition 35 of NSR permit issued 10/29/99)

The following chart delineates the periodic monitoring requirements for Reference No. 10:

Periodic Monitoring Requirements for the Make-ready Room				
Limitations	Parameter	Monitoring	Record Keeping	Reporting
Daily overall control efficiency at least 85%	Work practices, operational methods described in 9 VAC 5-40-3290 C	Monthly, of area inspections and solvent information	Monthly, of area inspections and solvent information	Semi-annually, of noncompliance and training conducted
VOC emissions limited to 18.6 lbs/hr, 371.7 lbs/day, and 34.1 tons/yr	Throughput/work practices/control efficiency/emissions	Daily records of calculated VOC losses	Daily and monthly (summation of daily calculations)	Semiannually, daily or monthly exceedances

Conditions will be added to the TV permit to reflect the above chart.

2. **The permittee shall develop, and submit to the Director, Piedmont Region for review and approval, checklists of the work practices required in Condition VIII.A.4 for the Make-Ready Room (EU ID #11). These checklists shall be submitted for approval no later than 180 days after the initial issuance of this Title V permit. The permittee shall use these checklists monthly to perform an inspection of the work practices used on each unit. The permittee shall record the time, date, and name of the staff member performing each inspection, as well as the annotated checklist for that inspection. Any deviations from the required work practices shall be corrected as expeditiously as possible and noted on the checklist. (9 VAC 5-80-110 B)**

### **Recordkeeping**

The permittee shall maintain records of all emission data and operating parameters necessary to demonstrated compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:

1. Monthly records of solvent VOC inventory loss from the Make-ready room emission sources (the doctor blade wash tank, manual cylinder cleaning operations, and floor washing operations)
2. Monthly records of daily and annual VOC emissions from the operation and cleaning of the Make-ready Room.
3. Total number of days that compliance was not achieved with Condition VIII.A.2, if any, and the total tons of excess emissions from the Make-ready room for each day not in compliance with that Condition.

**The following was added for periodic monitoring:**

4. **Checklists documenting all monthly inspections for work practice standards pertaining to the doctor blade wash tank and manual cylinder cleaning operations, as required by Condition VII.B.2.**

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.  
(9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 34 of 10/29/99 Permit)

### **Testing**

1. The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports will be provided at the appropriate locations.  
(9 VAC 5-50-30 and 9 VAC 5-80-110)
2. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the following test methods in accordance with procedures approved by the DEQ as follows:

Pollutant	Test Method (40 CFR Part 60, Appendix A)
VOC	EPA Methods 18, 25, 25a or as requested by DEQ
VOC	EPA Methods 24, 24a or as requested by DEQ

(9 VAC 5-80-110)

### Reporting

1. For every month in which J. W. Fergusson & Sons, Incorporated is not in compliance with any condition of this permit for any part of the month, J. W. Fergusson & Sons, Incorporated shall submit a report in writing to the DEQ (Director, Piedmont Regional Office) within 30 days following the end of the month, stating the applicable permit condition, describing the circumstances of the noncompliance with the permit condition, and containing any pertinent records from the list of required records in Section VII.C. Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it restrict in any way the DEQ's authority to enforce the conditions of this permit pursuant to Section 113 of the Clean Air Act.  
(9 VAC 5-50-50 E, Condition 26 of NSR permit dated 10/29/99)

**The following was added for periodic monitoring:**

3. **The permittee shall submit reports semi-annually to the Director, Piedmont Regional Office of the following:**
  - a. **Instances when monthly inspections of work practices for the Make-Ready room (EU ID #11) showed deviation from required practices, and actions taken, including training of personnel, to rectify the situation and prevent future occurrences.**
  - b. **Any day or month during which the calculated VOC emissions from the Make-Ready room (EU ID #11) exceeds the standards listed in Condition VIII.A.2.**

**(9 VAC 5-80-110 B)**

## EMISSION UNIT APPLICABLE REQUIREMENTS – Electroplating Operations (EU ID #31)

### Limitations

*The following limitations are from 40 CFR 63 Subpart N “National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks”:*

63.341 (a) *Small, hard chromium electroplating facility* means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity less than 60 million amp-hr/year.

63.342(b)(1) ...emission limitations apply during tank operation and also apply during startup and shutdown. ...limitations do not apply during periods of malfunction, but work practice standards that address operating and maintenance must be followed during malfunctions.

63.342(c)(1)(ii) During tank operation, shall control chromium emissions discharged to the atmosphere by not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.03 mg/dscm ( $1.3 \times 10^{-5}$  gr/dscf).

63.342(f) The work practice standards listed below address operation and maintenance practices. ...facility is subject to these work practices:

63.342(f)(1)(i) At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices, consistent with the operation and maintenance plan required by paragraph (f)(3)--**(Condition IX. A.9 of the Title V permit in reference to Appendix B).**

63.342(f)(1)(ii) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the operation and maintenance plan required by paragraph (f)(3) of this section.

63.342(f)(1)(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

63.342(f)(2)(i)&(ii) Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Director, Piedmont Regional Office, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the source. Based on the results of a determination made, the Director, Piedmont Regional Office may require that J. W. Fergusson & Sons, Inc. make changes to the operation and maintenance plan if the Director, Piedmont Region finds that the plan:

- (A) Does not address a malfunction that has occurred;
- (B) Fails to provide for the operation of the tank, composite mesh-pad system, or the monitoring equipment during a malfunction in a manner consistent with good air pollution control practices; or
- (C) Does not provide adequate procedures for correcting the malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as practicable.

63.342(f)(3)(i) J. W. Fergusson & Sons, Inc. shall prepare an operation and maintenance plan, which shall be incorporated by reference into the TV permit. The plan shall include the following elements:

*To be incorporated by reference, the plan needs to be submitted as part of the TV permit. A copy of the*



plan is contained in Appendix B of the permit.

- (A) The plan shall specify the operation and maintenance criteria for the chrome plating bath (ref #31), the composite mesh-pad system, and the monitoring system, and shall include a standardized checklist to document the operation and maintenance of this equipment.
- (B) The plan shall incorporate the work practice standards identified below:

<b>Composite Mesh-Pad System</b>	
<b><u>Work Practice Standards</u></b>	<b><u>Frequency</u></b>
Visually inspect device to ensure there is proper drainage, no chromic acid buildup on the composite mesh-pad system, and no evidence of chemical attack on the structural integrity of the device.	1/quarter
Visually inspect back portion of the back portion of the composite mesh-pad system to ensure there is no breakthrough of chromic acid mist.	1/quarter
Visually inspect ductwork from the tank to the control device to ensure there are no leaks	1/quarter

- (C) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur;
- (D) The plan shall include a systematic procedure for identifying malfunctions of process equipment, add-on air pollution control devices, and process and control system monitoring equipment and for implementing corrective actions to address such malfunctions.

63.342(f)(3)(ii) If the operation and maintenance plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, J. W. Fergusson & Sons, Inc. shall revise the operation and maintenance plan within 45 days after such an event occurs. The revised plan shall include procedures for operating and maintaining the process equipment, add on air pollution control device, or monitoring equipment during similar malfunction events, and a program for corrective action for such events.

The facility shall be subject to the General Provisions (Subpart A) of 40 CFR 63 as outlined in the table below:

Table 1 to Subpart N of 40 CFR 63: General Provisions Applicability to Subpart N

<b>Reference</b>	<b>Applies to Subpart N</b>	<b>Comment</b>
63.1(a)(1)	Yes.	Additional terms defined in §63.341; when overlap between subparts A and N occurs, subpart N takes precedence.

Reference	Applies to Subpart N	Comment
63.1(a)(2)	Yes.	
63.1(a)(3)	Yes.	
63.1(a)(4)	Yes.	Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.
63.1(a)(6)	Yes.	
63.1(a)(7)	Yes.	
63.1(a)(8)	Yes.	
63.1(a)(10)	Yes.	
63.1(a)(11)	Yes.	§63.347(a) of subpart N also allows report submissions via fax and on electronic media.
63.1(a)(12)-(14)	Yes.	
63.1(b)(1)	No	§63.340 of subpart N specifies applicability.
63.1(b)(2)	Yes.	
63.1(b)(3)	No	This provision in subpart A is being deleted. Also, all affected area and major sources are subject to subpart N; there are no exemptions.
63.1(c)(1)	Yes.	Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.
63.1(c)(2)	Yes.	Subpart N specifies permit requirements for area sources.
63.1(c)(4)	Yes.	
63.1(c)(5)	No	Subpart N clarifies that an area source that becomes a major source is subject to the requirements for major sources.
63.1(e)	Yes.	
63.2.	Yes.	Additional terms defined in §63.341; when overlap between subparts A and N occurs, subpart N takes precedence.
63.3.	Yes.	Other units used in subpart N are defined in that subpart.
63.4.	Yes.	
63.5(a)	Yes.	Except replace the term "source" and "stationary source" in §63.5(a) (1) and (2) of subpart A with "affected sources."
63.5(b)(1)	Yes.	
63.5(b)(3)	Yes.	Applies only to major affected sources.

Reference	Applies to Subpart N	Comment
63.5(b)(4)	No	Subpart N (§63.345) specifies requirements for the notification of construction or reconstruction for affected sources that are not major.
63.5(b)(5)	Yes.	
63.5(b)(6)	Yes.	
63.5(d)(1)(i)	No	§63.345(c)(5) of subpart N specifies when the application or notification shall be submitted.
63.5(d)(1)(ii)	Yes.	Applies to major affected sources that are new or reconstructed.
63.5(d)(1)(iii)	Yes.	Except information should be submitted with the Notification of Compliance Status required by §63.347(e) of subpart N.
63.5(d)(2)	Yes.	Applies to major affected sources that are new or reconstructed except: (1) replace "source" in §63.5(d)(2) of subpart A with "affected source"; and (2) actual control efficiencies are submitted with the Notification of Compliance Status required by § 63.347(e)
63.5(d)(3)-(4)	Yes.	Applies to major affected sources that are new or reconstructed.
63.5(e)	Yes.	Applies to major affected sources that are new or reconstructed.
63.5(f)(1)	Yes.	Except replace "source" in §63.5(f)(1) of subpart A with "affected source."
63.5(f)(2)	No	New or reconstructed affected sources shall submit the request for approval of construction or reconstruction under § 63.5(f) of subpart A by the deadline specified in § 63.345(c)(5) of subpart N.
63.6(a)	Yes.	

Reference	Applies to Subpart N	Comment
63.6(b)(1)-(2)	Yes.	Except replace "source" in § 63.6(b)(1)-(2) of part A with "affected source."
63.6(b)(3)-(4)	Yes.	Except replace "source" in §63.6(b)(5) of subpart A with "affected source."
63.6(b)(5)	Yes.	
63.6(b)(7)	No	Provisions for new area sources that become major sources are contained in §63.343(a)(4) of subpart N.
63.6(c)(1)-(2)	Yes.	Except replace "source" in § 63.6(c)(1)-(2) of subpart A with "affected source."
63.6(c)(5)	No	Compliance provisions for existing area sources that become major sources are contained in §63.343(a)(3) of subpart N.
63.6(e)	No	§63.342(f) of subpart N contains work practice standards (operation and maintenance requirements) that override these provisions.
63.6(f)(1)	No	§63.342(b) of subpart N specifies when the standards apply.
63.6(f)(2)(i)-(ii)	Yes.	§63.344(b) of subpart N specifies instances in which previous performance test results for existing sources are acceptable.
63.6(f)(2)(iii)	No	
63.6(f)(2)(iv)	Yes.	Subpart N does not contain any opacity or visible emission standards.
63.6(f)(2)(v)	Yes.	
63.6(f)(3)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	
63.6(i)(1)	Yes.	Except replace "source" in §63.6(i)(2)(i) and (ii) of subpart A with "affected source."
63.6(i)(2)	Yes.	
63.6(i)(3)	Yes.	§63.343(a)(6) of subpart N specifies the procedures for obtaining an extension of compliance and the date by which such requests must be
63.6(i)(4)(i)	No	

Reference	Applies to Subpart N	Comment
63.6(i)(4)(ii)	Yes.	submitted.
63.6(i)(5)	Yes.	
63.6(i)(6)(i)	Yes.	This paragraph only references "paragraph (i)(4) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(6)(ii)	Yes.	
63.6(i)(7)	Yes.	
63.6(i)(8)	Yes.	This paragraph only references "paragraphs (i)(4) through (i)(6) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(9)	Yes.	This paragraph only references "paragraphs (i)(4) through (i)(6) of this section" and "paragraphs (i)(4) and (i)(5) of this section" for compliance extension provisions. But, §63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(10)(i)-(iv)	Yes.	
63.6(i)(10)(v)(A)	Yes.	This paragraph only references "paragraph (i)(4)" for compliance extension provisions. But, §63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(10)(v)(B)	Yes.	
63.6(i)(11)	Yes.	
63.6(i)(12)(i)	Yes.	This paragraph only references "paragraph (i)(4)(i) or (i)(5) of this section" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a com-

Reference	Applies to Subpart N	Comment
63.6(i)(12)(ii)-(iii)	Yes.	pliance extension.
63.6(i)(13)	Yes.	
63.6(i)(14)	Yes.	
63.6(i)(16)	Yes.	
63.6(j)	Yes.	
63.7(a)(1)	Yes.	
63.7(a)(2)(i)-(vi)	Yes.	
63.7(a)(2)(ix)	Yes.	
63.7(a)(3)	Yes.	
63.7(b)(1)	No	§63.347(d) of subpart N requires notification prior to the performance test. §63.344(a) of subpart N requires submission of a site-specific test plan upon request.
63.7(b)(2)	Yes.	
63.7(c)	No	§63.344(a) of subpart N specifies what the test plan should contain, but does not require test plan approval or performance audit samples.
63.7(d)	Yes.	Except replace "source" in the first sentence of § 63.7(d) of subpart A with "affected source."
63.7(e)	Yes.	Subpart N also contains test methods specific to affected sources covered by that subpart.
63.7(f)	Yes.	§63.344(c)(2) of subpart N identifies CARB Method 425 as acceptable under certain conditions.
63.7(g)(1)	No	Subpart N identifies the items to be reported in the compliance test [§63.344(a)] and the timeframe for submitting the results [§63.347(f)].
63.7(g)(3)	Yes.	
63.7(h)(1)-(2)	Yes.	
63.7(h)(3)(i)	Yes.	This paragraph only references " § 63.6(i)" for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.7(h)(3)(ii)-(iii)	Yes.	
63.7(h)(4)-(5)	Yes.	

Reference	Applies to Subpart N	Comment
63.8(a)(1)	Yes.	
63.8(a)(2)	No	Work practice standards are contained in § 63.342(f) of subpart N.
63.8(a)(4)	No	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	§63.344(d) of subpart N specifies the monitoring location when there are multiple sources.
63.8(b)(3)	No	§63.347(g)(4) of subpart N identifies reporting requirements when multiple monitors are used.
63.8(c)(1)(i)	No	Subpart N requires proper maintenance of monitoring devices expected to be used by sources subject to subpart N.
63.8(c)(1)(ii)	No	§63.342(f)(3)(iv) of subpart N specifies reporting when the O & M plan is not followed.
63.8(c)(1)(iii)	No	§63.343(f)(2) identifies the criteria for whether O & M procedures are acceptable.
63.8(c)(2)-(3)	No	§63.344(d)(2) requires appropriate use of monitoring devices.
63.8(c)(4)-(7)	No	
63.8(d)	No	Maintenance of monitoring devices is required by §§63.342(f) and 63.344(d)(2) of subpart N.
63.8(e)	No	There are no performance evaluation procedures for the monitoring devices expected to be used to comply with subpart N.
63.8(f)(1)	Yes.	
63.8(f)(2)	No	Instances in which the Administrator may approve alternatives to the monitoring methods and procedures of subpart N are contained in §63.343(c)(8) of subpart N.
63.8(f)(3)	Yes.	
63.8(f)(4)	Yes.	
63.8(f)(5)	Yes.	
63.8(f)(6)	No	Subpart N does not require the use of

Reference	Applies to Subpart N	Comment
63.8(g)	No	CEM's. Monitoring data does not need to be reduced for reporting purposes because subpart N requires measurement once/day.
63.9(a)	Yes.	
63.9(b)(1)(i)-(ii)	No	§63.343(a)(3) of subpart N requires area sources to comply with major source provisions if an increase in HAP emissions causes them to become major sources.
63.9(b)(1)(iii)	No	§63.347(c)(2) of subpart N specifies initial notification requirements for new or reconstructed affected sources.
63.9(b)(2)	No	§63.347(c)(1) of subpart N specifies the information to be contained in the initial notification.
63.9(b)(3)	No	§63.347(c)(2) of subpart N specifies notification requirements for new or reconstructed sources that are not major affected sources.
63.9(b)(4)	No	
63.9(b)(5)	No	
63.9(c)	Yes.	This paragraph only references "§ 63.6(i)(4) through §63.6(i)(6)" for compliance extension provisions. But, §63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension. Subpart N provides a different timeframe for submitting the request than § 63.6(i)(4)
63.9(d)	Yes.	This paragraph only references "the notification dates established in paragraph (g) of this section." But, §63.347 of subpart N also contains notification dates.
63.9(e)	No	Notification of performance test is re-



Reference	Applies to Subpart N	Comment
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63.9(f)	No	quired by § 63.347(d) of subpart N.
63.9(g)	No	Subpart N does not require a performance evaluation or relative accuracy test for monitoring devices.
63.9(h)(1)-(3)	No	§63.347(e) of subpart N specifies information to be contained in the notification of compliance status and the timeframe for submitting this information.
63.9(h)(5)	No	Similar language has been incorporated into § 63.347(e)(2)(iii) of subpart N.
63.9(h)(6)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)	No	§63.346(b) of subpart N specifies the records that must be maintained.
63.10(b)(3)	No	Subpart N applies to major and area sources.
63.10(c)	No	Applicable requirements of §63.10(c) have been incorporated into §63.346(b) of subpart N.
63.10(d)(1)	Yes.	
63.10(d)(2)	No	§63.347(f) of subpart N specifies the timeframe for reporting performance test results.
63.10(d)(3)	No	Subpart N does not contain opacity or visible emissions standards.
63.10(d)(4)	Yes.	
63.10(d)(5)	No	§63.342(f)(3)(iv) and § 63.347(g)(3) of subpart N specify reporting associated with malfunctions.
63.10(e)	No	§63.347(g) and (h) of subpart N specify the frequency of periodic reports of monitoring data used to establish compliance. Applicable requirements of §63.10(e) have been incorporated into §63.347(g) and (h)
63.10(f)	Yes.	

Reference	Applies to Subpart N	Comment
63.11	No	Flares will not be used to comply with the emission limits.
63.12-63.15	Yes.	

## Monitoring

*Since Subpart N was promulgated after 1990, the testing, monitoring, record keeping, and reporting requirements listed in the Subpart satisfy the periodic monitoring requirements of Title V.*

The following conditions originate from 40 CFR 63 Subpart N "National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks."

63.343(c)(2)(ii) J. W. Fergusson & Sons, Inc. shall monitor and record the pressure drop across the composite mesh-pad system once each day that the composite mesh-pad system is operating. To be in compliance with the standards, the composite mesh-pad system shall be operated within the range of compliant operating parameter values established during multiple performance tests.

63.344(d)(2) The monitoring devices shall be installed such that representative measurements of the pressure drop across the composite mesh-pad system. Verification of the operational status of the device shall include execution of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system. Specifications shall be in accordance with manufacturer's accuracy specifications.

63.344(d)(5)(i)(A) Pressure taps shall be installed at the inlet and outlet of the control system. The inlet tap should be installed in the ductwork just prior to the packed bed and the corresponding outlet pressure tap should be installed on the outlet side prior to the blower or on the downstream side of the blower.

63.344(d)(5)(ii) Pressure taps shall be sited at locations that are:

- (A) Free from pluggage as possible and away from any flow disturbances such as cyclonic demisters.
- (B) Situated such that no air infiltration at the measurement site will occur that could bias the measurement.

63.344(d)(5)(iii) Pressure taps shall be constructed of either polyethylene, polybutylene, or other nonreactive materials.

63.344(d)(5)(iv) Nonreactive plastic tubing shall be used to connect the pressure taps to the device used to measure pressure drop.

63.344(d)(5)(v) Any of the following pressure gauges can be used to monitor pressure drop: a magnehelic gauge, an inclined manometer, or a "U" tube manometer.

63.344(d)(5)(vi) Prior to connecting any pressure lines to the pressure gauge(s), each gauge should be zeroed. No calibration of the pressure gauges is required.

## Record keeping

*The following record keeping requirements originate from 40 CFR 63 Subpart N "National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks."*

63.342(f)(v) J. W. Fergusson & Sons, Inc. shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the Director, Piedmont Regional Office. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for the inspection, upon request, by the Director, Piedmont Regional Office for a period of 5 years after each revision to the plan.

63.346(b) J. W. Fergusson & Sons, Inc. shall maintain the following records:

- (1) Inspection records for the composite mesh-pad system and monitoring equipment to document that the inspection and maintenance required by the work practice standards of 63.342(f) and Table 1 of 63.342 have taken place. The record can take the form of a checklist and should identify the device inspected, the date of inspection, a brief description of the working condition of the device during the inspection, and any actions taken to correct deficiencies found during the inspection.
- (2) Records of all maintenance performed on control device PCD ID #03, the composite mesh-pad system, and monitoring equipment.
- (3) Records of the occurrence, duration, and cause (if known) of each malfunction of the process, air pollution control equipment, and monitoring equipment.
- (4) Records of actions taken during periods of malfunction when such actions are inconsistent with the operation and maintenance plan.
- (5) Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the operation and maintenance plan required by 63.342(f)(3)
- (6) Test reports documenting results of all performance tests.
- (7) All measurements as may be necessary to determine the conditions during performance tests.
- (8) Records of pressure drop across the mesh pad control system taken once each day while the chrome plating bath (EU ID #31) is operating, including the date and time the data is collected.
- (9) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by the pressure drop across the composite mesh-pad system, that occurs during malfunction of the process, the composite mesh-pad system, or the monitoring equipment.
- (10) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by the inlet velocity pressure and pressure drop across the composite mesh pad system, that occurs during periods other than malfunction of the process, composite mesh-pad system, or monitoring equipment.
- (11) The total process operating time of the composite mesh-pad system (PCD ID #03) during the reporting period;
- (16) All documentation supporting the notifications and reports required by 63.9, 63.10, and 63.347.

60.346(c) All records shall be maintained for a period of 5 years.

## Testing

63.344(c)(1) Method 306 or Method 306A "Determination of Chromium Emissions from Decorative and Hard Chromium Electroplating and Anodizing Operations," Appendix A of this part shall be used to determine the chromium concentration from hard electroplating tanks or chromium anodizing tanks. The sampling time and sample volume for each run of Methods 306 and 306A, Appendix A of this part shall be at least 120 minutes and 60 dscf respectively. Methods 306 and 306A, Appendix A of this part allow the measurement of either total chromium or hexavalent chromium emissions. The hexavalent chromium concentration measured by these methods is equal to the total chromium concentration for the electroplating bath (EU ID #31).

## Reporting

The following reporting requirements originate from 40 CFR 63 Subpart N "National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks."

63.342(f)(iv) If actions taken by J. W. Fergusson & Sons, Inc. during periods of malfunction are inconsistent with the procedures specified in the operation and maintenance plan, J. W. Fergusson & Sons, Inc. shall record the actions taken for that event and shall report by phone such actions with 2 working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within 7 working days after the end of the event.

63.347(g)(1) J. W. Fergusson & Sons, Inc. shall submit a summary report to the Director, Piedmont Regional Office and to EPA Region III to document the ongoing compliance status of the chrome plating bath (EU ID #31). The report shall contain the information identified in below and shall be submitted semiannually except when:

- (i) The Director, Piedmont Regional Office determines that more frequent report is necessary to accurately assess the compliance status or
- (ii) The monitoring data collected by J. W. Fergusson & Sons, Inc. shows that the emission limit has been exceeded, in which case quarterly reports shall be submitted. Once J. W. Fergusson & Sons, Inc. reports an exceedance, ongoing compliance status reports shall be submitted quarterly until a request to reduce reporting frequency is approved.

63.347(g)(3) The compliance status report shall contain the following information:

- (i) The company name and address.
- (ii) An identification of the operating parameter that is monitored for compliance determination, in this case pressure drop across the mesh pad control system.
- (iii) The emission limitation for EU ID #31, and the inlet velocity pressure and pressure drop values that corresponds to compliance with this emission limitation.
- (iv) The beginning and ending dates of the reporting period.
- (v) A description of the type of process performed.
- (vi) The total operating time of EU ID #31 during the reporting period;
- (viii) A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other know causes, and unknown causes.
- (ix) A certification by a responsible office that the work practice standards were followed in accordance with the operation and maintenance plan for the source.
- (x) If the operation and maintenance plan was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the

- reports documenting that the operation and maintenance plan was not followed.
- (xi) A description of any changes in monitoring, processes, or controls since the last reporting period.
  - (xii) The name, title, and signature of the responsible official who is certifying the accuracy of the report. and
  - (xiii) The date of the report.

#### STATE ONLY APPLICABLE REQUIREMENTS

Existing permit conditions limiting specific Hazardous Air Pollutant emissions from the presses have been included in this section.

#### GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

#### FUTURE APPLICABLE REQUIREMENTS

None has been identified for this facility.

#### COMPLIANCE PLAN

Currently no compliance plan has been submitted by the permittee. This situation may change pending review of recent compliance tests conducted by the facility.

#### INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, record keeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity ( 5-80-720 C.)
12	Ink & Solvent Storage and Mixing	5-80-720 B.	VOC	N/A
13	Recovered Solvent Storage Tank 1982	5-80-720 B.	VOC	10,000 gallons
14	Isopropyl Acetate Storage Tank 1996	5-80-720 B.	VOC	8000 gallons
23	Weil-McLain Natural Gas Boiler Model 688 (Space Heat)	5-80-720 B.	N/A	1.4 MMBtu/hr heat input

Emission Unit No.	Emission Unit Description	Citation (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity ( 5-80-720 C.)

<sup>1</sup>The citation criteria for insignificant activities are as follows:  
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application  
9 VAC 5-80-720 B - Insignificant due to emission levels  
9 VAC 5-80-720 C - Insignificant due to size or production rate

### CONFIDENTIAL INFORMATION

The facility did not request that any portion of the TV permit be made confidential.

### PUBLIC PARTICIPATION

The proposed permit was placed in the Richmond Times-Dispatch on July 28, 2002 for public notice. The thirty day public comment period expired on August 27, 2002, and no comments were received.

**EPA Comments** were received in an e-mail to DEQ-Piedmont Regional Office (PRO) from Dave Campbell, of EPA Region III. The following are DEQ-PRO's response to EPA's comments regarding the draft Title V operating permit for J. W. Fergusson & Sons, Inc.

EPA Comment #1:

"1. Condition No. III.A.2: This condition establishes a fuel usage limit for the boilers [EU ID #21 and #22]. For purposes of clarity, you should amend the condition to indicate that the limitation applies to the boilers on a "combined" basis."

VA DEQ's Response #1: *Condition III.A.2. was amended as follows:*

2. The Cleaver Brooks boilers (EU ID #21 & #22) shall consume no more than 183 million cubic feet of natural gas per year **combined**, calculated as the sum of each consecutive twelve (12) month period.  
(VAC 5-80-110)

Condition No. III.A.3 This conditions contains a pollutant-specific annual emission limitation. For purposes of practical enforceability, you should amend the condition to indicate that annual emissions are to be determined for each 12-month consecutive period.

Please note, for annual limits elsewhere in the permit it is correctly indicated via footnotes that the limits are to be determined on a 12-month consecutive basis. For purposes of clarity, you should amend these footnotes to remove the term "average" from "average annual emissions". The annual values in these instances are not averages, they are sums.

VA DEQ's Response #2: *Condition III.A.3 was amended as follows:*

3. Combined emissions from the operation of the Cleaver Brooks boilers (EU ID #21 & #22) shall

not exceed the limits specified below:

Nitrogen Oxides (as NO <sub>2</sub> )	2.1 lbs/hr	9.2 tons/yr (9 VAC 5-50-260)
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**Annual emissions are calculated as the sum of each consecutive twelve (12) month period.**  
(9 VAC 5-80-110)

Additionally, the word “average” was deleted from the referenced footnotes.

EPA Comment #3:

General Comment: The facility is subject to 40 CFR part 63, subparts KK and N. It is recommend that a generic statement(s) be added to the permit requiring the permittee to operate in accordance with the requirements of subparts KK and N.

VA DEQ’s Response #3:

Conditions were added to the permit to incorporated the explicit references to Subparts KK and N.

Conditions IV.A.7 and V.A.7 make specific reference to Subpart KK and read as follows:

7. **Except where this permit is more restrictive than the applicable requirement, the rotogravure presses (EU ID No. 1 & 2 [or 3 through 6]) shall be operated in compliance with 40 CFR 63 Subpart KK.**  
**(9 VAC 5-60-60 and 9 VAC 5-60-70)**

Condition IX.A.1 makes specific reference to Subpart N and reads as follows

1. **Except where this permit is more restrictive than the applicable requirement, the chromium electroplating process (EU ID #31) shall be operated in compliance with the requirements of 40 CFR 63, Subpart N.**  
**(9 VAC 5-60-60 and 9 VAC 5-60-70)**

EPA Comment #4:

General Comment: It is presumed that the facility has been subject to 40 CFR part 63, subpart KK for some period of time. Conditions No. IV.A.8 and 9 (**Note that these have become IV.A.9 and IV.A.10 with the addition of the above condition referencing Subpart KK**) refer to certain obligations of the facility with respect to compliance with subpart K that are currently effective (i.e. in effect in advance of the final title V permit). If the facility has already, for example, prepared a startup, shutdown, and malfunction plan, the permit should reference the specific plan that has been prepared and incorporate that plan as an appendix to the permit. The same is true for the operation and maintenance plan required by 40 CFR part 63, subpart N. (See Condition IX.A.8) **Note that IX.A.8 has become IX.A.9 with the addition of the above condition referencing Subpart N.**

VA DEQ’s Response #4:

For Conditions IV.A.10 and V.A.10:

10. J. W. Fergusson & Sons, Inc. shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The plan shall identify all routine or otherwise predictable control and monitoring system malfunctions. This plan shall be developed by the permittee by the source's compliance date for that relevant standard. The plan shall be incorporated by reference into the source's Title V permit **(see Appendix A to this permit)**.  
(40 CFR 63.9(e)(3))

For Condition IX.A.9:

9. J. W. Fergusson & Sons, Inc. shall prepare an operation and maintenance plan to be implemented no later than January 25, 1997. The plan is herein incorporated by reference into this Title V permit **(see Appendix B to this permit)**. The plan shall include the following elements...

Appendix A and B have also been added to the Table of Contents for the permit.